

## **APPENDIX E**

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### **Scoping Comments**

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## **Scoping Comment Summary**

During October/November 2006, the California Department of Fish and Game (CDFG) received 26 scoping comment cards and letters in reference to the Notice of Preparation for the Shasta River Watershed-wide Permitting Program and the Scott River Watershed-wide Permitting Program. Fourteen of the 26 comment submissions were considered “general” by CDFG, and therefore were considered in preparation of both Environmental Impact Reports (EIRs). There were eight letters specifically addressing concerns in the Scott River watershed, and four letters that applied to the Shasta River watershed.

Scoping Comments that addressed issues in the Shasta River watershed were received from the following:

### ***Federal Agencies***

United States Army Corps of Engineers

### ***State Agencies***

State Clearinghouse Letter – SCH #2006102093

Quartz Valley Indian Reservation

Yurok Tribe

Native American Heritage Commission

Siskiyou County

### ***Organizations***

Ad Hoc Committee – Ann Maurice

Cal Trout – Curtis Knight

Klamath Riverkeeper – Regina Chichizola

North Coast Consumer’s Alliance – Ellen Faulkner

Pacific Coast Federation of Fishermen’s Associations – Vivian Helliwell

### ***Individuals***

Gary Black

Jack Cowley

Monique Dixon

Margaret Draper

Dean Estep

Don Gutleben

Justin Ly

Don Meamber

Danielle Quigley



**DEPARTMENT OF THE ARMY**  
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
333 MARKET STREET  
SAN FRANCISCO, CALIFORNIA 94105-2197

REPLY TO

DEC 27 2006

2006 DEC 29 PM 12 24  
RECEIVED  
DFC - REDDING

Regulatory Branch (1145b)

SUBJECT: File Number 400208 (Shasta River) and 400209 (Scott River)

Mr. Bob Wialiams  
California Department of Fish and Game  
601 Locust Street  
Redding, California 96001

Dear Mr. Williams:

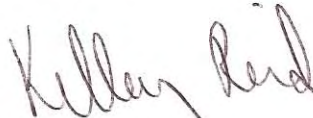
This letter responds to a request for comments on the "Notice of Preparation of a Draft Environmental Report" for establishing watershed wide permitting programs on the Scott and Shasta Rivers. Both the Shasta and Scott Rivers and their tributaries are considered waters of the United States. All proposed discharges of dredged or fill material into waters of the United States must be authorized by the Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. Section 1344). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands.

Your proposed work appears to be within our jurisdiction and a permit may be required for your project. The Corps has a number of permitting options available. Permits may be in the form of a Regional General Permit issued to your office as the sponsor or Individual Permits issued for each project site. Application for Corps authorization should be made to this office. An application Form is available upon request. The application must include plans showing the location, extent, and character of the proposed activity. You should note, in planning your project, that upon receipt of a properly completed application and plans, it may be necessary to advertise the proposed work by issuing a Public Notice for a period of 30 days.

Our Nationwide and Regional General Permits have already been issued to authorize certain activities provided specified conditions are met. Your completed application will enable us to confirm that your activity is already authorized. You are advised to refrain from starting your proposed activity until we make a determination that the project is covered by an existing permit. Commencement of work before you receive our notification will be interpreted as a violation of our regulations.

Should you have any questions regarding this matter, please call Michael Shirley of our Regulatory Branch at 707-443-0855. Please address all correspondence to the Regulatory Branch and refer to the File Number at the head of this letter.

Sincerely,

A handwritten signature in dark ink, appearing to read "Kellay Hicks", written over a horizontal line.

Jane M. Hicks  
Chief, Regulatory Branch

Copy Furnished:

CA DFG, Redding, CA  
CA RWQCB, Redding, CA

County of Siskiyou Planning Department  
P.O. Box 1085  
Yreka, California 96097



Arnold Schwarzenegger  
Governor

STATE OF CALIFORNIA  
Governor's Office of Planning and Research  
State Clearinghouse and Planning Unit



Sean Walsh  
Director

Notice of Preparation

October 20, 2006

To: Reviewing Agencies

Re: Shasta River Watershed-Wide Permitting Program  
SCH# 2006102093

Attached for your review and comment is the Notice of Preparation (NOP) for the Shasta River Watershed-Wide Permitting Program draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

**Bob Williams**  
**Department of Fish and Game, Region 1**  
**601 Locust Street**  
**Redding, CA 96001**

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

*for* Scott Morgan  
Senior Planner, State Clearinghouse

Attachments  
cc: Lead Agency

**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2006102093  
**Project Title** Shasta River Watershed-Wide Permitting Program  
**Lead Agency** Fish & Game #1

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**Type** NOP Notice of Preparation  
**Description** The program is designed to implement key coho salmon recovery tasks while facilitating compliance by agriculture operators and those implementing coho salmon restoration projects with the California Endangered Species Act and Fish and Game Code section 1602.

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**Lead Agency Contact**

**Name** Bob Williams  
**Agency** Department of Fish and Game, Region 1  
**Phone** 530-225-2365 **Fax**  
**email**  
**Address** 601 Locust Street  
**City** Redding **State** CA **Zip** 96001

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**Project Location**

**County** Siskiyou  
**City**  
**Region**  
**Cross Streets**  
**Parcel No.**  
**Township**

**Range**

**Section**

**Base**

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**Proximity to:**

**Highways**  
**Airports**  
**Railways**  
**Waterways** Scott River Watershed  
**Schools**  
**Land Use** Various

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**Project Issues** Biological Resources; Agricultural Land; Landuse; Toxic/Hazardous; Water Quality; Public Services; Other Issues

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**Reviewing Agencies** Resources Agency; Department of Boating and Waterways; Department of Conservation; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Native American Heritage Commission; State Lands Commission; California Highway Patrol; Caltrans, District 2; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 1

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**Date Received** 10/20/2006 **Start of Review** 10/20/2006 **End of Review** 11/20/2006

# NOP Distribution List

## Resources Agency

- ☒ Resources Agency  
Nadell Gayou
- ☒ Dept. of Boating & Waterways  
David Johnson
- ☐ California Coastal  
Commission  
Elizabeth A. Fuchs
- ☐ Colorado River Board  
Gerald R. Zimmerman
- ☒ Dept. of Conservation  
Roseanne Taylor
- ☐ California Energy  
Commission  
Paul Richins
- ☐ Dept. of Forestry & Fire  
Protection  
Allen Robertson
- ☒ Office of Historic  
Preservation  
Wayne Donaldson
- ☒ Dept of Parks & Recreation  
Environmental Stewardship  
Section
- ☐ Reclamation Board  
DeeDee Jones
- ☐ S.F. Bay Conservation &  
Dev't. Comm.  
Steve McAdam
- ☒ Dept. of Water Resources  
Resources Agency  
Nadell Gayou
- ☐ \_\_\_\_\_  
Conservancy

## Fish and Game

- ☐ Depart. of Fish & Game  
Scott Flint  
Environmental Services Division
- ☐ Fish & Game Region 1  
Donald Koch
- ☐ Fish & Game Region 2  
Banky Curtis

- ☐ Fish & Game Region 3  
Robert Floerke
- ☐ Fish & Game Region 4  
Julie Vance
- ☐ Fish & Game Region 5  
Don Chadwick  
Habitat Conservation Program
- ☐ Fish & Game Region 6  
Gabrina Gatchel  
Habitat Conservation Program
- ☐ Fish & Game Region 6 I/M  
Tammy Allen  
Inyo/Mono, Habitat Conservation  
Program
- ☐ Dept. of Fish & Game M  
George Isaac  
Marine Region

## Other Departments

- ☐ Food & Agriculture  
Steve Shaffer  
Dept. of Food and Agriculture
- ☐ Depart. of General Services  
Public School Construction
- ☐ Dept. of General Services  
Robert Sleppy  
Environmental Services Section
- ☐ Dept. of Health Services  
Veronica Malloy  
Dept. of Health/Drinking Water

## Independent

### Commissions, Boards

- ☐ Delta Protection Commission  
Debby Eddy
- ☐ Office of Emergency Services  
Dennis Castrillo
- ☐ Governor's Office of Planning  
& Research  
State Clearinghouse
- ☒ Native American Heritage  
Comm.  
Debbie Treadway

County: **Siskiyou**

- ☐ Public Utilities Commission  
Ken Lewis
- ☒ State Lands Commission  
Jean Sarino
- ☐ Tahoe Regional Planning  
Agency (TRPA)  
Cherry Jacques

## Business, Trans & Housing

- ☐ Caltrans - Division of  
Aeronautics  
Sandy Hesnard
- ☐ Caltrans - Planning  
Teri Pencovic
- ☒ California Highway Patrol  
Shirley Kelly  
Office of Special Projects
- ☐ Housing & Community  
Development  
Lisa Nichols  
Housing Policy Division

## Dept. of Transportation

- ☐ Caltrans, District 1  
Rex Jackman
- ☒ Caltrans, District 2  
Marcelino Gonzalez
- ☐ Caltrans, District 3  
Jeff Pulverman
- ☐ Caltrans, District 4  
Tim Sable
- ☐ Caltrans, District 5  
David Murray
- ☐ Caltrans, District 6  
Marc Birnbaum
- ☐ Caltrans, District 7  
Cheryl J. Powell

- ☐ Caltrans, District 8  
Dan Kopulsky
- ☐ Caltrans, District 9  
Gayle Rosander
- ☐ Caltrans, District 10  
Tom Dumas
- ☐ Caltrans, District 11  
Mario Orso
- ☐ Caltrans, District 12  
Bob Joseph

## Cal EPA

### Air Resources Board

- ☐ Airport Projects  
Jim Lerner
- ☐ Transportation Projects  
Ravi Ramalingam
- ☐ Industrial Projects  
Mike Tollstrup

- ☐ California Integrated Waste  
Management Board  
Sue O'Leary

- ☐ State Water Resources Control  
Board  
Jim Hockenberry  
Division of Financial Assistance

- ☐ State Water Resources Control  
Board  
Student Intern, 401 Water Quality  
Certification Unit  
Division of Water Quality

- ☐ State Water Resources Control Board  
Steven Herrera  
Division of Water Rights

- ☒ Dept. of Toxic Substances Control  
CEQA Tracking Center

- ☐ Department of Pesticide Regulation

SCH# **2006102093**

## Regional Water Quality Control Board (RWQCB)

- ☒ RWQCB 1  
Cathleen Hudson  
North Coast Region (1)
- ☐ RWQCB 2  
Environmental Document  
Coordinator  
San Francisco Bay Region (2)
- ☐ RWQCB 3  
Central Coast Region (3)
- ☐ RWQCB 4  
Teresa Rodgers  
Los Angeles Region (4)
- ☐ RWQCB 5S  
Central Valley Region (5)
- ☐ RWQCB 5F  
Central Valley Region (5)  
Fresno Branch Office
- ☐ RWQCB 5R  
Central Valley Region (5)  
Redding Branch Office
- ☐ RWQCB 6  
Lahontan Region (6)
- ☐ RWQCB 6V  
Lahontan Region (6)  
Victorville Branch Office
- ☐ RWQCB 7  
Colorado River Basin Region (7)
- ☐ RWQCB 8  
Santa Ana Region (8)
- ☐ RWQCB 9  
San Diego Region (9)

☐ Other \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Last Updated on 04/28/06





Quartz Valley Indian Reservation  
13601 Quartz Valley Road  
Fort Jones, CA 96032  
ph: 530-468-5907 fax: 530-468-5908

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November 17, 2006

Bob Williams, Staff Environmental Scientist  
Conservation Planning  
California Department of Fish and Game  
Northern California - North Coast Region  
601 Locust Street  
Redding, California 96001

California Department of Fish and Game,

Please find the enclosed the comments submitted by the Quartz Valley Indian Reservation (QVIR). We would like to thank you for this opportunity to provide comments during the DEIS scoping process on the Shasta and Scott ITP and Environmental Check List.

The Reservation is located in both Scott and Shasta Valley's. The health of the fishery in these two water sheds is critical to the health and survival of the way of life of our native people, within the Shasta and Scott and the entire lower-Klamath basin.

We understand the need to compromise and work together with the agricultural community and their established way of life. However, we feel this document is in no way a compromise of two sides and regret that tribe's have not been involved from the beginning of this process.

We will continue to provide our technical comments in a hope that they are considered when preparing the final EIS. If a true desire to restore the fishery in both the Scott and Shasta Valley's exists, then we would expect a final EIS to include some of the issues we have presented.

Thank you.

Sincerely,

Harold Bennett  
Tribal Vice-Chairman  
Quartz Valley Indian Reservation

## *Shasta River Scoping Comments*

### *Technical Memorandum*

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The California Department of Fish and Game (CDFG) issued a Notice of Preparation (NOP) of a Draft Environmental Impact Statement (DEIS) for a Shasta River Watershed-Wide Coho Salmon Incidental Take Permitting Program on 11 October of this year.

An Incidental Take Permit (ITP) is required by the California Endangered Species Act (CESA) to be obtained by any party planning to engage in any land- or water use which might cause harm to any species listed for protection under the California Endangered Species Act (CESA).

Coho salmon (*Oncorhynchus kisutch*) were found to require protection as a threatened species, under the terms of the federal ESA, throughout their range in northwestern California and southern Oregon, by the National Marine Fisheries Service more than a decade ago (Weitkamp et al., 1995). The California Department of Fish and Game eventually reached a similar conclusion and moved to list coho under the CESA statutes in 2003 (CDFG, 2002). In response to the State's listing, a *Draft Shasta Valley Resource Conservation District Master Incidental Take Permit Application* was filed with CDFG in April 2005 (SVRCD, 2005).

The comments provided are drawing on both the 2005 *SVRCD Draft ITP* and the recently-released *Environmental Check List and Initial Study (Initial Study)* (CDFG, 2006). These documents are intertwined. The *Shasta River Total Maximum Daily Loads (TMDL's) for Temperature and Dissolved Oxygen* (NCRWQCB, 2006) is also referenced here, along with the comments on that document offered last spring by the Quartz Valley Indian Community (QVIC, 2006). The QVIC document is provided as Appendix A to these scoping comments because it provides excellent background information on the factors that limit salmon populations, including their water quality needs, and recommendations for monitoring and restoring cold water fish populations.

Because neither the *SVRCD Draft ITP* nor the CDFG *Initial Study* adequately characterize the status of the coho salmon species in northwestern California; streamflow issues related to that status; the role of groundwater extractions on stream habitat; or anything resembling a best-science approach to coho salmon protection and restoration (see: Bradbury et al., 1994), background discussion on these issues is provided here.

#### **AN OVERVIEW OF CDFG'S INCIDENTAL TAKE PERMITTING PROCESS**

A fundamental flaw in CDFG's approach to the proposed permitting of the incidental take of coho salmon in the Shasta River watershed is that it will not succeed in protecting coho

salmon and it will not, therefore, satisfy CDFG's CESA authority for issuing such a permit in the first place.

The basic authority for these incidental take permits (California Fish and Game Code Section 2081) states, in part, that

(c) No permit may be issued pursuant to subdivision (b) if issuance of the permit would jeopardize the continued existence of the species. The department shall make this determination based on the best scientific and other information that is reasonably available, and shall include consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (1) known population trends; (2) known threats to the species; and (3) reasonably foreseeable impacts on the species from other related projects and activities.

The *Initial Study* fails to meet the stated CESA requirements for the use of best available science; it does not properly characterize the true risk of coho salmon extinction; and it does not acknowledge that the continuation of existing land- and water uses in the watershed will, in all likelihood, cause further decline of coho salmon in the Shasta River. Because the ITP does not address issues like the excessive diversion of streamflow and the over-extraction of groundwater, flow-related water quality problems in the Shasta River will not be resolved and coho salmon will likely continue to decline, or will become extinct altogether. The actions that CDFG would permit will, in fact, jeopardize "the continued existence of the species".

CDFG's use of SVRCD Draft ITP submission date as the baseline conditions for the application of CEQA may just meet the minimum requirements of CEQA but it fails altogether to comport with the department's duties under the State and federal endangered species acts and legislative mandates such as the Fisheries Restoration Act of 1985 (CF&G Code Section 2760, et seq.), which contemplates not only the prevention of further salmon population declines in the state, but planning and implementation, by the department, of a doubling of salmon numbers, "primarily through the improvement of stream habitat".

The preponderance of scientific evidence found in 1995 that Shasta River basin coho salmon required the protection of State and federal endangered species acts because dams, land use and water extraction activities had so profoundly changed habitat quality that the species was – and it remains to this day -- on the verge of extinction. Maintaining the Shasta River coho salmon population at its current depleted level will most likely only postpone their extinction until they are overcome by genetic drift or stochastic events (Rieman et al., 1993).

To meet the requirements of CEQA, the DEIS must consider past, current and future environmental effects. By setting baseline conditions as those existing in April 2005, CDFG fails to consider the past activities degrading coho salmon habitat, such as the development and operation of Dwinnell Dam; the over-diversion of surface water, the growing over-extraction of groundwater, and water pollution generated by agricultural activities (NAS, 2003). CDFG's entire DEIS is, to the contrary, limited to assessing the impacts of narrowly-defined ITP-related restoration activities and it skips all mention of those land- and water-use actions which are degrading coho habitat in the Shasta River watershed. By concentrating on

narrow restoration measures, and ignoring the adverse impacts of current land- and water uses, the DEIS fails CEQA's test to consider cumulative environmental impacts which, taken together, are significant in their nature.

The *Initial Study* does not recognize the *Shasta TMDL* (NCRWQCB, 2006) and there is no indication that the substantial body of technical information concerning pathways to coho salmon protection and restoration (Kier Associates, 1991; 1999; NAS, 2003) were ever reviewed or used by CDFG. Ideally the Shasta River watershed-wide ITP would work in conjunction with the TMDL because water quality problems are the major reason for coho salmon decline in the basin. Given the present weaknesses the CDFG ITP process, water quality problems issues identified in the State's TMDL will remain unattended and jeopardy to Shasta River coho salmon will continue.

Actions taken under the *SVRCD Draft ITP* and *Initial Study* focus only on coho salmon, which is not the only Pacific salmon species at risk in the Shasta River basin nor, for that matter, the one of greatest economic importance. This single-species "tunnel vision" fails to protect steelhead trout (*O. mykiss*) and Chinook salmon (*O. tshawytscha*), as well as coho salmon.

Were CDFG to continue in its present approach to approve the watershed-wide ITP as proposed, it is essentially permitting a number of activities that violate State and federal law, including:

- the failure to release adequate flows from Dwinnell Dam to maintain fish life in the Shasta River, a violation of CFG Code Sections 5937 and 5946.
- The extraction of groundwater that is directly connected to surface water requires a State Water Resources Control Board (SWRCB) water rights permit, yet none was obtained when the flow from Big Springs was first tapped in the late 1980's, destroying essential Shasta River salmon and steelhead refuge habitat (Kier Associates, 1999).
- The listing of the Shasta River as impaired under the Clean Water Act (NCRWQCB, 2005) recognizes the river's impaired polluted condition; mandates the need for a TMDL water quality recovery plan; and mandates the cooperation of agencies of State government beyond those with primary responsibility for water pollution abatement.

The issuance of a watershed-wide ITP as proposed by CDFG will shield activities in the Shasta River watershed which are inimical to coho salmon protection and restoration from effective and necessary legal challenge.

#### **SUMMARY COMMENTS ON THE *SVRCD DRAFT ITP* APPLICATION**

The *Initial Study* is written in response to the 2005 submittal of the *SVRCD Draft ITP* but it does not take advantage of the detailed information from it concerning the specific actions to be taken. What follows here is a brief summary of the *SVRCD Draft ITP*. More details concerning its stipulations are, then, included in a later section that reviews the elements of the *Initial Study* itself (which begins on page 6 of these comments).

In general, the *SVRCD Draft ITP* is well written and comprehensive. It provides a frank discussion of factors known to limit coho salmon in the Shasta River, a reach by reach description of stream impairment, and some good suggestions on how to remedy the problems posed by agricultural operations to coho recovery. The schedule for implementation stretches over several years, but some actions to improve conditions for coho, such as excluding cattle from riparian zones, would begin immediately.

The *SVRCD Draft ITP*, however, has some critical short-comings that are likely to confound coho recovery: the lack of jurisdiction of the State Watermaster concerning riparian water rights, the inability to quantify and control groundwater extractions, and a lack of solutions related to fish passage and water pollution associated with the operation of Dwinnell Dam. The goals of the ITP appear to be realistic, but at the same time target conditions should meet the needs of coho salmon – which in some cases they do not. The timeframe for the implementation of *SVRCD Draft ITP* actions is variable. Table 1 lists various restoration and planning measures, together with the deadline for their completion.

Table 1. Actions recommended by the Shasta Valley ITP (SVRCD, 2005) and timeframes for their implementation.

Action	Final Deadline
Minimum riparian setback of 35 feet	Immediately upon CDFG Approval of ITP
Drought Year Plan	Within 1 yr. of CDFG Approval of ITP
Ramped Diversion Plan	In Place 1/1/2008
Screen All Diversions	Within 2 yrs. of signing on to ITP
Develop Coho Migrant Index	2008
Minimum D.O. of 6 ppm	2008
Coho reaches fenced or fencing in progress	2008
Cease use of gravel diversion dams	2009
Fish passage at major diversion dams	2010
Decrease temperature 5° F	2015
Flows never < 20 cfs	2015

## COHO POPULATION VIABILITY ISSUES AND TARGETS FOR RECOVERY

The *SVRCD Draft ITP* provides information from the Shasta River Rack counting station fish counts and radio tagging studies that indicate that coho salmon returns likely range from merely dozens in some years to the low hundreds. Minimum viable population levels to retain genetic diversity range from 200 to 500 individuals (Gilpin and Soule, 1986; Riggs, 1990), so it is likely that Shasta River coho are at critically low survival levels.

The CDFG *Initial Study* makes no mention whatsoever of Shasta River coho salmon population status. Data from Shasta River downstream migrant traps show that coho salmon are at very low levels (Figure 1) and there are indications of weak year classes similar to those recognized in the Scott River Basin (QVIC, 2005). Although downstream migrant trapping results show a community dominated by salmonids, catfish out-numbered coho salmon juveniles in the trap. This indicates that water quality is beginning to favor warm water species

and that impoundments within the Shasta River basin are a source of invasive predators that are a threat to juvenile coho.

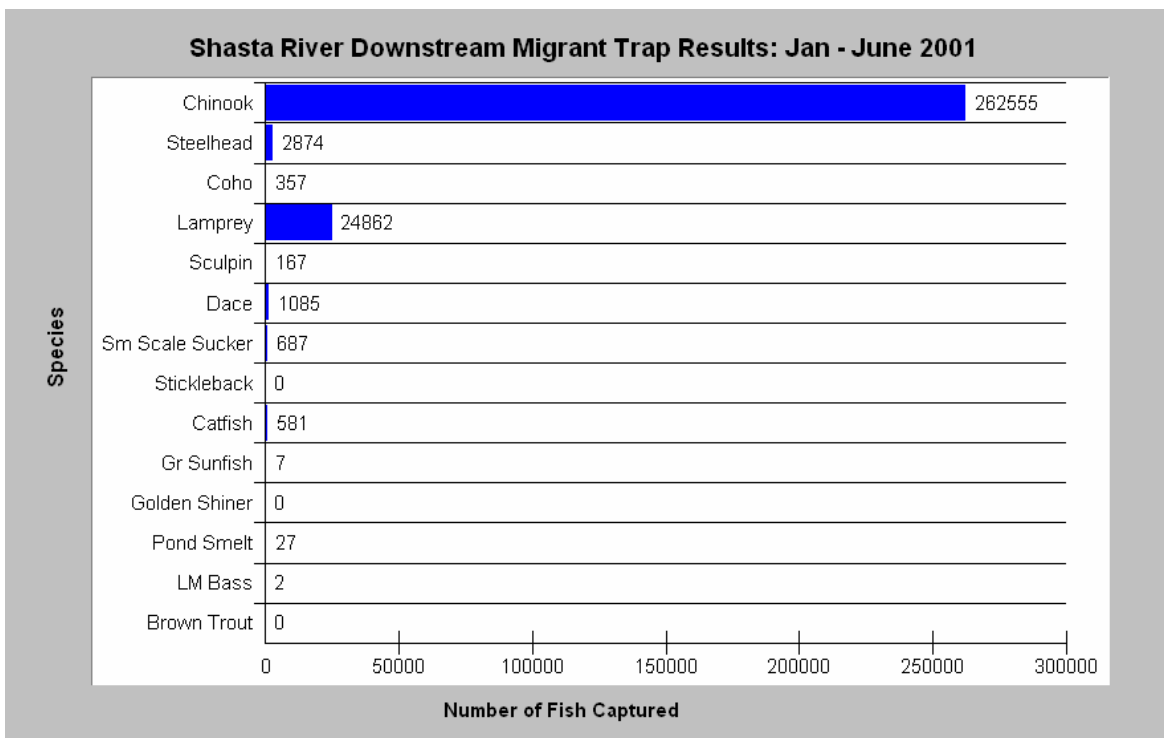


Figure 1. Downstream migrant trapping results from the Shasta River from January to June 2001. Data provided by CDFG (Chesney, 2002) and chart from KRIS V 3.0.

The *SVRCD Draft ITP* correctly assumes that yearling coho juveniles seen moving upstream from the Klamath into the lower Shasta River indicate an interaction with a larger population group or a metapopulation (Rieman et al. 1993). If this plasticity extends, as well, to spawning then interchange between small populations in different tributaries may be helping Shasta River coho maintain their genetic diversity. The CDFG DEIS needs to discuss the overall Klamath Basin coho salmon population condition, metapopulation function, and potential interactions between Shasta River coho salmon stocks and those nearby.

Increased adult coho returns since 2000, when compared to those of the 1980s, are attributed by the *SVRCD Draft ITP* to improvement of Shasta River habitat conditions, but it may well also be associated with improved ocean conditions and wet on-land cycles associated with the Pacific decadal oscillation cycle (Hare et al., 1999; Collison et al., 2003). Ocean conditions off California, Washington and Oregon switched to more favorable conditions in about 1995 and a shift to unfavorable conditions is likely to occur between 2015 and 2025 (Collison et al., 2003). When ocean conditions become unfavorable and a drier on-land climate returns, freshwater habitat conditions will have to have been improved or the risk of Shasta River coho extinction will be substantially increased (see Appendix A for more in depth discussion). The CDFG DEIS needs to discuss how a switch of the PDO in 2015-2025 may impact coho salmon and their on-shore habitat in terms of their prospects for survival.

The *SVRCD Draft ITP* takes the position that habitat conditions in the Shasta River watershed were likely less favorable for coho than were coastal streams. On the contrary, before the development of agriculture in the Shasta, the icy flows from springs likely provided ideal habitat conditions for adult and juvenile salmonids, including coho salmon, year around (NAS, 2003).

Because tributaries of the mid-reaches of the Shasta River often lack surface flow due to almost complete year-round diversion, the *SVRCD Draft ITP* raises questions as to whether these were ever viable coho streams. Groot and Margolis (2001) indicate that coho prefer streams with a gradient of 2% or less. Streams like Julian Creek, Willow Creek, Oregon Slough and the Little Shasta River all have suitable gradient and, therefore, would likely have been inhabited by coho before agricultural development.

The *SVRCD Draft ITP* works under the assumption that coho juveniles entering the mainstem Klamath River as young-of-the-year have almost zero survival, but such an assumption may well not be correct. The Karuk Department of Natural Resources routinely sees coho salmon juveniles using very small tributary streams where they were not spawned and these cold water tributaries may represent important refugia during times when the mainstem Klamath River water quality conditions are poor (Watercourse Engineering, 2005). Were the Klamath Hydroelectric Project dams removed, there would likely be a substantial improvement in water quality (QVIC, 2006b) and a resulting much increased rate of survival of Shasta River coho juveniles during out migration down the Klamath River. This prospect also needs to be addressed in the forthcoming DEIS.

The *SVRCD Draft ITP* suggest that attaining a survival rate of 85 juveniles per adult female spawner will avoid “take” and will meet ESA requirements, based on studies from other West Coast coho studies. Maintaining a population at a very low level engenders much higher risk of population loss. Alternatively, a strategy of opening up spawning areas and expanding access by coho to additional suitable habitat enable expansion of the population to a more sustainable and stable level (Rieman et al., 1993). In order to maintain the viability of the Shasta River coho population into the future, an annual return of at least 500 adults must be attained (Gilpin and Soule, 1990; Higgins et al., 1992). The *Initial Study* fails to address the present status or future viability of the Shasta River coho salmon population. The DEIS must address these critical issues and include tangible measures for species recovery, including monitoring to support adaptive management.

#### **DETAILED COMMENTS ON CDFG’S INITIAL STUDY**

The CDFG (2006) *Initial Study* for issuance of a Shasta River watershed-wide ITP was reviewed and the following comments refer specifically to passages from that document.

Baseline Conditions: As mentioned above, a flaw in the *Initial Study* (p 6) is setting the environmental baseline conditions as those which existed at the time the *SVRCD Draft ITP* application was filed in 2005. Baseline conditions are typically defined in scientific studies as

those that existed prior to human impacts. NAS (2003) describes historic habitat conditions in the Shasta River prior to European colonization as ideal for all species of Pacific salmon. Cool spring water emerging on the Shasta Valley floor piped by lava tubes from the shoulders of Mt. Shasta provided high summer base flows. Baseline conditions would have included access for spawning and rearing to headwater areas of the Shasta River and tributaries like Eddy Creek above the present site of Dwinnell Dam. Many important tributaries, such as Parks Creek (Figure 2) and the Little Shasta River, had perennial flow and were viable salmonid habitat.

Access for Inspection: The *Initial Study* (p 11) states that non-enforcement personnel must be allowed access to all lands covered under the watershed-wide ITP. The delegation of responsibility to the SVRCD of reporting infractions and the need for advance notice before even non-enforcement personnel make inspections calls into question CDFG's willingness to enforce the ITP. This is especially troubling given that inadequate enforcement by CDFG and others of existing law precipitated the need to list Shasta River coho salmon under the State and federal endangered species acts.

#### Avoidance and Minimization of Impacts

Stockwater Access: The *Initial Study* (p. 12) stipulates that stock access to the Shasta River and cattle crossing must be restricted after October 31. Fall Chinook salmon historically entered the Shasta River in mid-September and are actively spawning throughout October. Klamath River fall Chinook escapement in recent years shows an alarming downward trend (see Appendix A) and any actions taken under the coho salmon ITP that allow negative impacts to Chinook salmon would be unwise. This is just one example of problems caused by using a single species approach in the ITP process.

Flows: The requirement that all diversions must have flow gauges and that data collected by the California Department of Water Resources (DWR) Watermaster must be shared in a timely manner with CDFG is a step in the right direction. However, as pointed out by NAS (2003):

“The 1932 adjudication of surface waters in the basin, as currently administered, is insufficient to supply the quantity and quality of water necessary to sustain salmonid populations in the basin.”

The fact that riparian water rights below Dwinnell Dam are not part of the adjudication means that the State Watermaster has no authority over them. Riparian land holders may divert water from the stream without regulation, which means that there is no enforcement mechanism for protecting instream flows, even if conservation measures were implemented.





Figure 2. Parks Creek running dry during the summer of 2003 near the point of diversion where most of its flow is diverted into Dwinell Reservoir. Copyrighted photo used by permission of Michael Hentz.

The DEIS needs to acknowledge that flows in the Shasta River have fallen well below those needed to support salmonids and to maintain water quality. Flows in the lower Shasta River often drop below 20 cubic feet per second (cfs) (Figure 3), which is the target for minimum instream flows in the *SVRCD Draft ITP*. That target is to be met by 2015, but there is no scientific support for that level of flow with regard to restoring cold water fisheries.

Ground water extraction for irrigation and domestic use have significantly decreased surface flows in the Shasta River with major consequences for salmonid carrying capacity (NAS, 2003). Appropriative water rights are required when ground water diversion affects surface flows directly, but no permits have been requested nor issued despite widespread recognition of the problem. The *SVRCD ITP* recommends that “groundwater usage affecting surface flows should be incorporated into water management activities” but offers no specific required action. Uncontrolled ground water extraction has the potential to offset benefits of other ITP efforts. Enforcement action is needed to stop the present illegal diversion of groundwater, and flows from Big Springs must be restored. The *Shasta River TMDL* (NCRWQCB, 2006) recommends an increase in flows at Big Springs to 45 cfs to improve water quality. NAS (2003) stated that “small increases in flow could reduce transit time substantially and thus increase the area of the river that maintains tolerable temperatures.” This needs to be pointed out in CDFG’s DEIR.

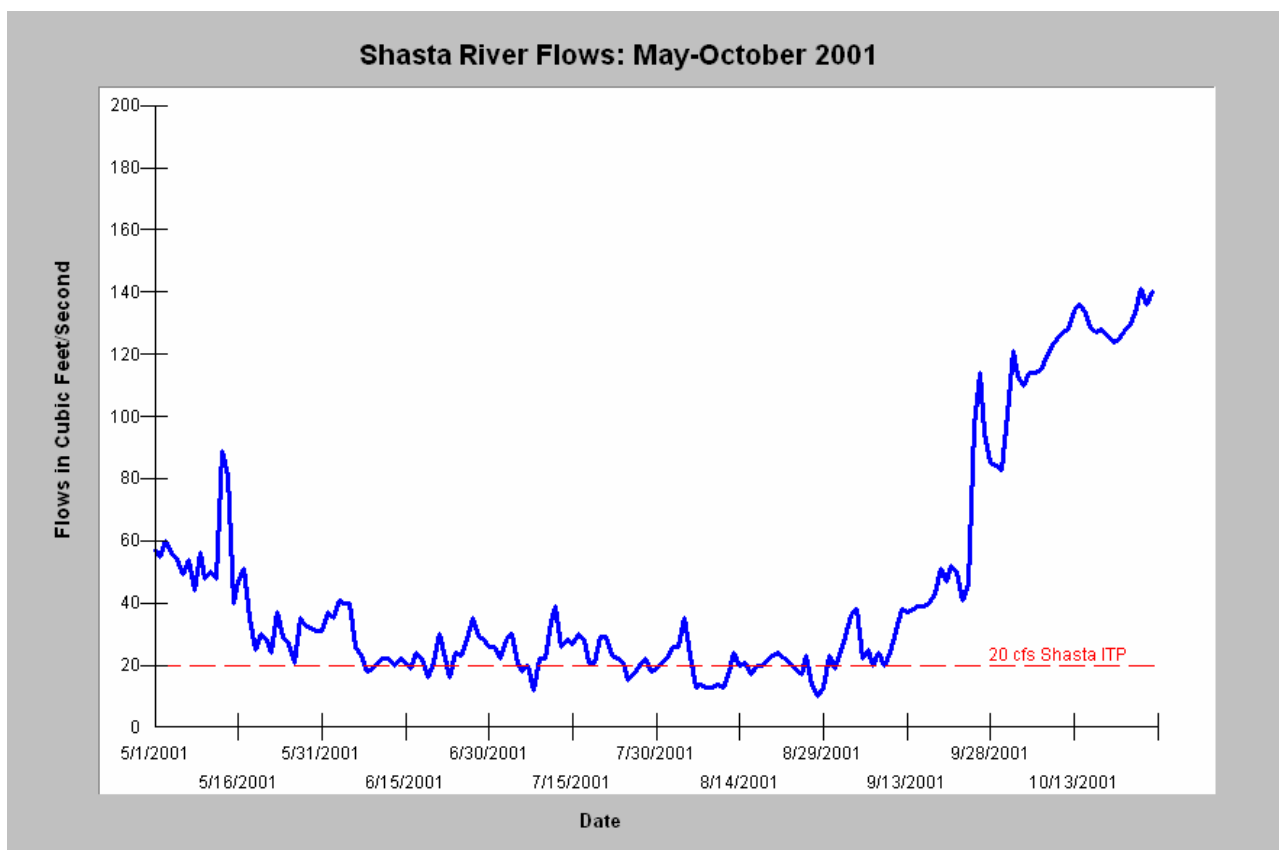


Figure 3. Average daily flow at the USGS Shasta River gauge for May through October 2001 show a pattern of extremely low flows with many days falling below 20 cubic feet per second.

Fish Screens/Fish Passage: The *Initial Study* (p 12) calls for screening of all agricultural water diversions and for the remediation of fish passage problems at diversions, which are positive and necessary steps. Fish passage problems associated with de-watering of lower Parks Creek and the Little Shasta River, however, go unmentioned.

Riparian Restoration: Although the *Initial Study* calls for restoring riparian areas and excluding cattle by constructing fences, the riparian buffer width in *SVRCD Draft ITP* application is only 35 feet, which is insufficient and scientifically insupportable. Poole and Berman (2001) noted the influence of riparian width on water temperature, with wider buffer strips more able to create cooler ambient air temperature over the stream and promote higher relative humidity. Bartholow (1989) showed that mean daily water temperature was most influenced in Western streams by air temperature over the stream, and secondarily by relative humidity, with shade ranking third in influence. Increased buffer widths would also increase the filter capacity for runoff from upland agricultural activity.

Gravel “Push Up” Dams: The *Initial Study* (p 12) calls for a transition from building temporary gravel dams to the use of pumps in most cases, which is a satisfactory approach.

Bank Stabilization: The *Initial Study* states that CDFG would require that all permittees under the watershed-wide ITP use living plant materials for bank stabilization, which is called “bioengineering” (CDFG, 2005). This is an ideal approach to preventing soil loss as fish habitat is maintained or improved.

Tailwater Recovery: Agricultural return flows in the Shasta River often are a source of thermal and nutrient pollution. The *Initial Study* calls for prioritizing agricultural return flows for capture and reuse on the land to decrease thermal and nutrient pollution. While this proposal commendable, implementation even at priority sites could take ten years or more. This measure deserves greater emphasis and urgency in the DEIR.

Dwinnell Dam: The *Initial Study* calls for the screening of the outflow from Dwinnell Reservoir to prevent escapement of warm water fishes and exploring the feasibility of improving flows and/or building a fish ladder over the dam. These proposed measures fall far short of what is necessary and show a lack of understanding of the profound problems caused by this impoundment. Shasta River spring Chinook salmon were likely extirpated by Dwinnell Dam (Kier Associates, 1991).



Figure 4. Dwinnell Dam has blocked upper Shasta River spawning areas since 1928, loses 50% of the water it holds to evaporation and leakage (NAS, 2003) and contributes to water quality problems in the Shasta River.

The NCRWCB and UC Davis (2005) *Lake Shastina Limnology* report shows that Dwinnell Reservoir bears a striking similarity to Iron Gate and Copco reservoirs in the Klamath Hydroelectric Project (QVIR, 2006b). Nitrogen fixing blue-green algae grow at nuisance levels within the Dwinnell Reservoir (Figure 5) and contribute to significant water pollution problems. Temperatures and pH are high and dissolved oxygen may undergo significant depression related to algal photosynthesis and decomposition. The prevalence of warm water fish species in the reservoir is indicative of Dwinnell’s poor water quality.

The DEIS on the Shasta River watershed-wide ITP needs to recognize that remediation of water quality problems within Dwinnell Reservoir is not possible and that fish passage over the dam is both infeasible and undesirable. See discussions related to Iron Gate Reservoir in *Proposed Terms and Conditions for Relicensing of the Klamath River Hydroelectric Project* (QVIC, 2006b). NAS (2003) stated that the Shasta River has the greatest prospect in the Klamath Basin for salmonid restoration during the upcoming period of global warming and urges consideration of the removal of Dwinnell Dam. The complete lack of flow below Dwinnell Dam is illegal and it should motivate CDFG to advocate for dam removal.





Figure 5. This photo shows Dwinnell Reservoir, also known as Lake Shastina, which has significant blooms of nitrogen fixing algae. Copyrighted photo used with permission of Michael Hentz.

#### Mitigation Obligations of the SVRCD Under the ITP

Shasta River Water Bank: The *Initial Study* (p 14) would establish an unfavorable precedent of paying farmers and ranchers to leave water in the Shasta River and its tributaries during periods critical for coho salmon survival. Public trust protection is required under California law. Land and water users are obligated to protect common property resources, such as native, cold water fish species. Enforcement action is needed if sufficient stream flows to protect the public trust are not provided. Ironically, the envisioned water purchases or leases to benefit coho would likely not be sufficient to restore Chinook and steelhead. Thus, future negotiations and payments would be needed to improve flows for those species.

Retirement of some water rights through purchase might be a viable strategy, but only if adjudication were revisited and a mechanism put in place to prevent extraction of the conserved fish water by downstream riparian land owners. The *Initial Study* refers to the use of Water Code Section 1707 for securing water dedicated for instream flows, but there is no discussion of tangible measures to acquire such rights nor how they would be enforced.

Improve Instream Flows Through Increased Efficiency of Water Use: The call for improving flows and efficiency of water use in the *SVRCD Draft ITP* and the *Initial Study* are both positive steps. As noted above, however, flow increases would be geared only to coho salmon protection and would not likely benefit Chinook salmon and steelhead. Although the *Initial*

Study references California Water Code Section 1707 that would allow the dedication of water to instream flows for fish, insufficient detail is provided as to how such measures would be pursued, if at all.

Strategy for Dry and Critically Dry Years: According to the *Initial Study*, dry and critically dry years must be identified within one year of ITP approval. The proposed solution to maintain flows in dry and critically dry years is to increase pumping of ground water with payment from the Water Trust for pumping costs. Ground water extraction in the Shasta River basin is already depleting surface flows (Kier Associates, 1999; NAS, 2003), and this strategy is unlikely to succeed.

Coordinating Diversions: Shasta River flows may vary widely within any given day when irrigation is taking place, which may lead to short-term but critical low flow periods that do not show up in average daily flow summaries from USGS. The *Initial Study* calls for coordination of diversions through a Diversion Ramp-Up Management Plan. This is very good and much needed.

Off-stream Stock Water Development: The *Initial Study* (p 15) requires that at least two additional off-stream stock water systems be installed per year during the term of the watershed-wide ITP. The specific target for decreasing the need for stock water from surface water diversions concerns the migration of adult coho after the rains come (November 15). This again ignores critical Chinook salmon needs for additional flow for spawning throughout the month of October.

Spawning Gravel Enhancement: Gravel enhancement in key reaches for coho spawning is recommended in the *Initial Study* (p 16) and is likely needed. Gravel in the Shasta River basin has been depleted by dewatering in winter of streams such as Parks Creek, the construction and operation of Dwinnell Dam, and massive extraction of gravel in the vicinity of Yreka Creek for I-5 construction. A far better solution to replenishing the river's gravel supply, however, would be to restore natural recruitment through the removal of Dwinnell Dam and re-establishing flows in tributaries (See Restoration below).

Habitat Restoration Structures: The *Initial Study* calls for installation of habitat improvement structures in reaches of the Shasta River used by coho salmon. Kier Associates (1999) noted that poor water quality and lack of flow reduced use of habitat improvement projects on Bureau of Land Management (BLM) lands in the lower Shasta River known locally as "Salmon Heaven" (Figure 6). Consequently, investment in instream structures should be contingent on remediating water quality and water flow problems.

Large Diversions Identified as Barriers: To its credit, the *Initial Study* (p 17) specifically identifies three major, long-standing fish passage problems at large diversions and targets them for improvement or replacement.



Figure 6. This photo shows the Shasta River flowing through BLM land in the canyon reach in an area referred to as Salmon Heaven. Boulders were placed to improve fish habitat, but water quality is too poor to support salmonid juveniles during most of summer. Photo from KRIS Version 3.0 (TCRCD, 2003).

### Monitoring and Adaptive Management Under the ITP

The responsibility for monitoring under the Shasta River watershed-wide ITP would fall to the SVRCD and DWR, with both having responsibility to report to CDFG. Provision of raw data to CDFG is required, which is a necessity in any science-based activity (Collison et al., 2003). The DEIS prepared by CDFG should include stipulations and descriptions of mechanisms for sharing of raw data with the State Water Boards, the Tribes and the interested public. While both implementation and effectiveness monitoring are called for, no specific monitoring activities are defined. In order to allow trend monitoring and adaptive management, the DEIS needs to require collection of water quality and fisheries data at the same locations and with the same methods already established. Study design for monitoring under the ITP should not be delegated to SVRCD staff nor should specific monitoring requirements be deferred for later action.

### Potential Air Quality Impacts of the ITP

The Initial Study (p 26-35) discussion of air quality and potential impacts of ITP related activities extends for nine pages. It correctly concludes that restoration will have no

significant impact on air quality. Following a “boiler plate” Environmental Check List in this way leads to dozens of pages of unnecessary narrative on similar subjects.

### Biological Resources and Impacts of ITP Implementation

CDFG recognizes that the Shasta River watershed-wide ITP will have potential impacts on other species. We note above that the *Initial Study* considers validating flow levels that target coho only and could incidentally harm Chinook salmon and steelhead, if approved. CDFG notes that riparian bird species could be temporarily displaced by riparian restoration activities. As discussed above, the true impact of continuing agricultural practices under the ITP on coho salmon is unaddressed in this section because of the *Initial Study*’s limited focus on the environmental effects of implementing the ITP itself. The DEIS needs to discuss how maintaining current patterns of stream diversion with only minor changes for coho will avoid the risk of jeopardy to Shasta River Chinook salmon and steelhead populations as discussed above.

### Geologic Hazards and ITP Implementation

This section in the *Initial Study* (p 39-47) provides some very interesting information on the geology of the Shasta River basin, but it is otherwise a digression from the subject at hand. One conclusion drawn is that “the project will not likely increase the potential for an eruption of Mt Shasta” or to increase earthquake risk. Really.

### Potential for Release of Hazardous Materials During ITP Implementation

The *Initial Study* (p 47-52) concludes after a lengthy discussion that the implementation of the Shasta River watershed-wide ITP poses minimal risk of a release of hazardous materials into the environment. The possible “take” through exposure of coho salmon to hazardous materials such as pesticides or herbicides associated with normal agricultural operations is not discussed anywhere.

### Hydrologic and Water Quality Impacts of ITP Implementation

Once again, the emphasis of the *Initial Study* on ITP implementation instead of upon the existing impacts to coho salmon makes the lengthy discussion of hydrologic and water quality conditions (p 54-77) of limited value. Major questions regarding water quality remain unanswered. For example, the *SVRCD Draft ITP* proposes improving Shasta River temperatures by lowering the mainstem water temperature by 5° F -- from 80.6° to 75.6° F at Montague-Grenada Road, by 2015. This modest improvement will not support coho salmon rearing and it shows the need to augment flows to attain water temperatures required by salmon as discussed by NAS (2003). U.S. Fish and Wildlife Service data on dissolved oxygen from the lower Shasta River (Figure 7) show that dissolved oxygen levels fall below those optimal for salmonids during summer and even into stressful ranges at night when algae is respiring. The DEIS needs to more fully characterize existing water quality problems as part of baseline discussions.



While the Initial Study states that ITP projects will not increase total impervious area (TIA), it has no recommendation for limits to protect the integrity of urbanizing streams, such as Yreka Creek. Increasing TIA can have substantial impacts on the diversity of fish species and water quality (May et al., 1996)

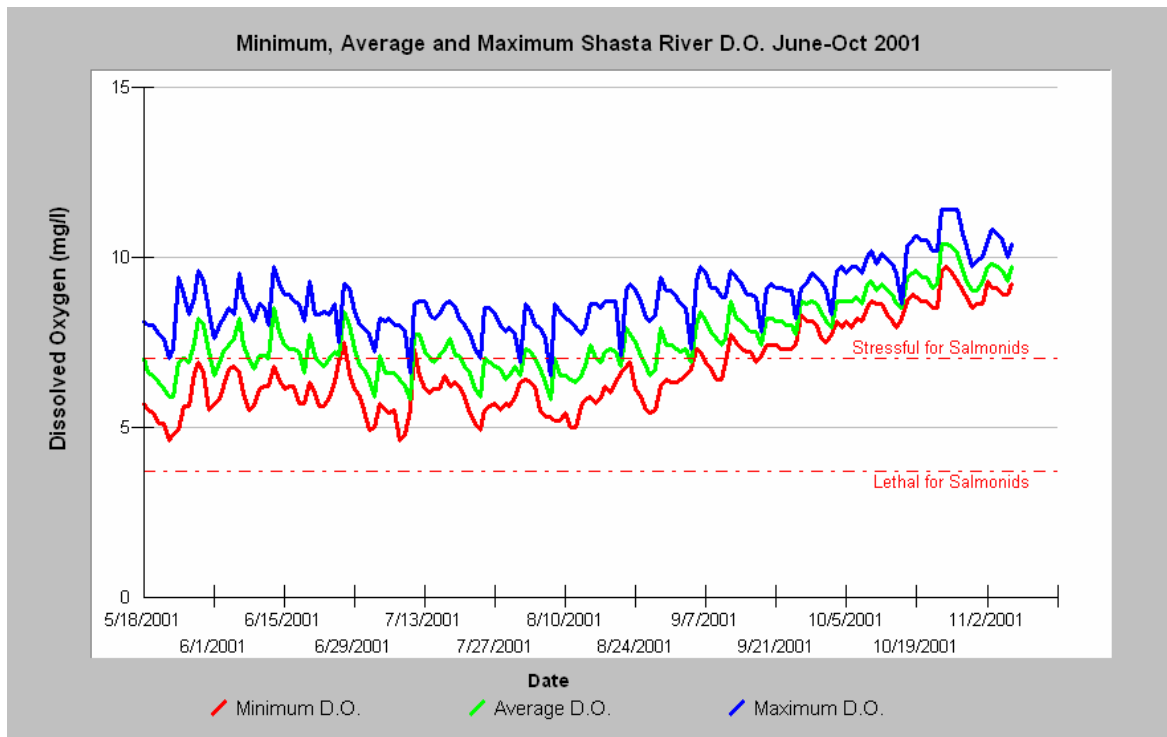


Figure 7. This chart shows the minimum, average and maximum dissolved oxygen of the Shasta River throughout summer in 2001, with highly stressful conditions for salmonids prevailing. Data from USFWS.

To meet with any significant success, the DEIS needs to coordinate actions with those recommended in the *Shasta River TMDL* (NCRWQCB, 2006) and to share responsibility and authority for the oversight of Shasta River water pollution abatement of restoration of cold water fisheries resources. It also needs to honestly address the issue of how flow affects water quality.

#### **ACTIONS NEEDED TO RESTORE SHASTA RIVER ECOSYSTEM AND COHO SALMON**

The *SVRCD Draft ITP* pays special attention to the Shasta River reach where Big Springs and Parks Creek converge, correctly characterizing it as refugia that should be a priority for protection and restoration. DWR (1981) noted that Big Springs Creek had the highest amount of Chinook salmon spawning in the Shasta River basin and cold water base flows from the springs sustained temperatures suitable for rearing salmonids throughout summer in the past (NAS, 2003).



Rieman et al. (1993) in their highly useful paper *Consideration of Extinction Risks for Salmonids* state:

“Maintaining strong populations in the best possible habitats throughout the landscape and preserving the ecological processes characteristic of metapopulations are the best hedges against extinction.”

NAS (2003) stated that ground water diversion had caused a major decline in flow in this reach as a result of ground water withdrawals. A midterm review of the State-federal cooperative Klamath Basin Fisheries Restoration Program (Kier Associates, 1999) pointed out that surface water withdrawals had increased as well.

In addition to water withdrawals, increased grazing in riparian zones and excavation with heavy equipment has increased bank erosion and sediment yield to Big Springs Creek and the Shasta River below (Kier Associates, 1999). The lower reaches of Parks Creek have numerous springs and could have been restored to highly suitable coho salmon habitat, but a land trade between a willing private land owner and the U.S. Bureau of Land Management, to enable government acquisition for that purpose, was vetoed by the Siskiyou County Board of Supervisors (Ronald Iverson, personal communication). Instead the riparian zone of lower Parks Creek is still heavily grazed and conditions there are very poor.

The *SVRCD Draft ITP* also recognizes that timber harvest in upper Parks Creek may be a source of fine sediment.

Bradbury et al. (1996) also recognize that the most important step in restoring Pacific salmon populations is to protect refugia. Unfortunately the trend for the most important reach of the Shasta River, which includes Big Springs Creek and lower Parks Creek, has been toward a more degraded condition over recent years. Some mechanism must be found to limit ground water extraction and to restore some of the cold spring flow back to the Shasta River and its tributaries as recommended in the *SVRCD Draft ITP*.

Stream reaches at higher elevations above the current site of Dwinnell Dam would also likely be suitable for coho salmon, Chinook and steelhead and could serve as expanded habitat and additional refugia, if Dwinnell Dam were removed. Dwinnell Dam operations are not covered by the proposed ITP.

The *Draft Shasta Valley ITP* (SVRCD, 2005) will rely heavily on funding through the Natural Resources Conservation Service (NRCS) from the EQIP program. This source of funds has recently been used for the installation of groundwater pumps in the Scott River that may be hindering – certainly not helping – streamflow and fish habitat in that basin. NRCS policy is to not publicly disclose who receives funds, nor anything about the project, without the express written permission of the landowner. This lack of transparency hampers adaptive management and makes it more likely that money will be spent on things that enhance farm economics

while falling short of benefiting fish. The DEIS needs to stipulate that the location of restoration investments from any public agency be made public and that effectiveness monitoring related to such investments be pursued.

Wider riparian buffers may not be considered fully because of practical concerns of farmers and ranchers, i.e., that too much area would be lost to production. The ITP should recommend the use of conservation easements to obtain adequate compensation for farmers and ranchers to establish a sufficiently wide riparian zone. The ITP should commit to experiments to determine if microclimatic benefits and attendant stream cooling can be attained with wider buffers.

## CONCLUSION

CDFG should consider taking a more global approach to Shasta River coho salmon conservation and recovery that would benefit all the Pacific salmon species concerned and fully remediate the watershed's water quality problems. The current approach of trying to mitigate current impacts, while maintaining the existing agricultural and water use practices will not likely prevent jeopardy of coho salmon under the proposed ITP, as required under CESA.

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April 4, 2006

Catherine Kuhlman, Executive Officer  
North Coast Regional Water Quality Control Board  
5550 Skylane Blvd., Suite A  
Santa Rosa, CA 95403

Dear Ms. Kuhlman,

The Quartz Valley Indian Community of Quartz Valley Indian Reservation (QVIR), with the assistance of our consultants Kier Associates, have reviewed the public draft version of the North Coast Regional Water Quality Control Board's (RWB) Staff Report for the *Action Plan for the Shasta River Watershed Temperature and Dissolved Oxygen Total Maximum Daily Loads* (Shasta TMDL).

The Tribe hopes that the Shasta TMDL will result in measurable and timely improvements in the water quality of the Shasta River watershed. Please realize that QVIR is the only federally recognized, sovereign tribal government in Siskiyou County. The consideration that the Board gives to our comments should be representative of this fact.

We appreciate the efforts of your staff in the creation of this document. The Board and its Staff should be well aware of QVIR's position on the Shasta River TMDL. Please find attached the official comments of the Quartz Valley Indian Reservation regarding the Shasta River TMDL and Implementation Plan.

The QVIR supports the concept of the TMDL. The Tribe would like to see the Shasta River Watershed restored to historical healthy and sustainable conditions. We do have some concerns with the draft document and question some of the implementation approaches, however, we feel overall that the Shasta TMDL is a good place to begin with action towards restoring the historic water quality of the Shasta River Watershed.

We understand the Regional Board has limited staff and funding, therefore we would like to provide assistance by being involved in the implementation of the Shasta TMDL and working on a government to government basis with monitoring and restoration. Additionally, the Tribe would like to be a party in the suggested Memorandums of Understanding between federal agencies and the Regional Board.

I would like to stress the Tribe's sentiment that the state of the Shasta Watershed needs immediate attention and action. We have seen populations of coho, Chinook, steelhead, and lamprey severely decline in the Shasta Watershed. To us, water is life. We are concerned about the future of our lives and call upon the North Coast and State Water Boards to protect and heal this watershed.

QUARTZ VALLEY INDIAN RESERVATION  
COMMENTS ON: ACTION PLAN FOR THE SHASTA RIVER WATERSHED TEMPERATURE AND DISSOLVED OXYGEN  
TOTAL MAXIMUM DAILY LOADS

1

Attached, you will find technical comments and recommendations. Please contact myself or my environmental staff at 530-468-5907 for further information or clarification on the issues discussed.

Thank you,

Harold Bennett  
Vice Chairman

Quartz Valley Indian Reservation has reviewed the public draft version of the North Coast Regional Water Quality Control Board's (RWB) Staff Report for the *Staff Report for the Action Plan for the Shasta River Watershed Temperature and Dissolved Oxygen Total Maximum Daily Loads* (Shasta TMDL).

Following the summary immediately below, detailed comments which correspond to the particular Scott TMDL subjects are provided (some of the comments are applicable to several sections of the TMDL). Where subjects were not addressed by the RWB staff we have inserted discussion where such matters would fit, had they been addressed. Insignificant issues such as typographic/grammar errors are included as Appendix A.

## SUMMARY OF COMMENTS

Overall, the technical analysis in the Shasta Dissolved Oxygen (D.O.) and Temperature TMDL uses sound logic, has good supporting graphics, and uses standard models that have been previously used in the basin. The models are transparent and their assumptions are clearly stated and for the most part well supported. The Shasta TMDL recognizes that increasing flows is an important action needed to remediate water temperature problems, which is both scientifically accurate and commendable.

There are several ways in which the technical portion of the TMDL could be improved. First, there is no discussion of pH in the TMDL, despite the fact that pH values in the mainstem often exceed *Basin Plan* objectives (NCRWCB 2001), are high enough to be stressful to salmonids, and have similar causes as the dissolved oxygen issue. Second, the TMDL repeatedly refers to nutrient sources (such as from tailwater returns and Dwinnell Reservoir) as problems because of contributions to nitrogenous biological oxygen demand (NBOD), when NBOD is in fact only a small part of the oxygen demand in the Shasta River. The real problem with those nutrient sources, which the TMDL repeatedly overlooks, is the total amount of nitrogen (in all forms) contained in those nutrients sources and its stimulation of aquatic plant growth. This occurs throughout the Staff Report and the *Basin Plan* amendment language, and should be corrected.

A more holistic watershed focus is another way in which the TMDL could be improved. Partially due to the model-centric focus of the TMDL, the Shasta River is treated as a 40 mile trunk without functional tributaries. Flow data from the *Appropriation of Water Rights in the Shasta Basin* (CADPW, 1932) contained in the TMDL show that all tributaries had surface flow and were functional parts of the Shasta River, but there is no mention of restoring connectivity. Pollution from reaches of streams like upper Parks Creek are not recognize because they are not part of the model, although Parks Creek is connected to the Shasta River during major storms. Water quality issues within Lake Shastina (aka Dwinnell Reservoir) are described, but the benefit of removing the dam for abating temperature and nutrient pollution is not discussed. It should be noted here that NRC (2004) recommends consideration of removal of Dwinnell Dam.

A summary of our comments regarding implementation is included below as Table 1 (patterned after Table 4 of the Basin Plan amendment language). The water quality compliance scenario in temperature TMDL includes a 50% increase in flow from Big Springs Creek. We strongly support that decision; however the TMDL implementation does not lay out a clear path for how such a substantial increase in flow could be achieved. The RWB proposes to take no action to increase flows to improve water quality for five years, which seems like a long wait given the stock status of Klamath River salmon (Kier Associates, 2006); we think two years would be a more reasonable amount of time. Implementation relies heavily on voluntary measures, although adjacent language stressing the Regional Water Board's (RWB) ability to follow up with enforcement is reassuring. The implementation plan proposes good ideas for how to manage tailwater return flows, riparian areas, and rangelands. The discussion of urban and suburban runoff does not contain any language regarding planning or design, an oversight that should be corrected.

The Shasta TMDL does not set a clear monitoring program, leaving it until a year after TMDL approval. It would seem wise to encourage continuation of specific on-going monitoring efforts of relevant parameters before the more comprehensive plan is drafted.

## **DETAILED COMMENTS**

### **Chapter 1: Introduction**

On the whole, the introductory chapter is visually appealing and highly informative.

#### 1.4 Watershed Overview

The Watershed Overview section (1.4) has maps that give the reader excellent geographic reference, but also convey rainfall patterns, geology, vegetation and location of modeling reaches. Hydrology and flow (1.4.5) are also clearly laid out in this section, including powerful summary charts. Discussion of riparian (1.4.7.1) reveals interesting information specific to the Shasta River that is useful for understanding model parameters in later chapters. Sections on historic and current land use (1.4.8) help frame the problem in a longer term continuum.

##### 1.4.10 Anadromous Fish of the Shasta River Watershed

The section on fisheries (1.4.10) is thorough and there are useful charts that summarize data on fall chinook, coho and steelhead trout. Although data on steelhead and coho are sparse, the Shasta TMDL should state explicitly that life history requirements of these species make them more vulnerable to water quality problems. Consequently, coho and steelhead populations are likely to have declined more than fall Chinook salmon, which do not require extended freshwater rearing.

Although the TMDL makes no mention of it, Pacific salmon populations are effected changing ocean productivity and patterns of precipitation. The Pacific Decadal Oscillation (PDO) cycle causes major shifts in ocean productivity and conditions seem to shift from favorable for salmon to unfavorable approximately every 25 years. Good ocean conditions for salmon off the California and Oregon Coast prevailed from 1900-1925 and 1950-1975 and switched to favorable again in 1995 (Hare et al., 1999). The good ocean cycle is usually

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associated with increased rain and snow fall. Poor ocean cycles from 1925-1950 and 1976-1995 were associated with dry on-land cycles.

The Chinook salmon population of the Shasta River is showing a long term decline (Figure 1) that does not bode well for long term survival. The population is failing to rebound despite recent average and above average rainfall years and mostly favorable ocean conditions. Collison et al. (2003) point out that PDO conditions will switch back to negative ocean and dry on land sometime between 2015 and 2025 and that, if freshwater habitat conditions have not improved by that time, stock losses are likely to occur. Shasta stocks ranged from 533-726 from 1990-1992 during the last dry climatic cycle, a critically low level (Gilpin and Soule, 1990). The final Shasta TMDL should cite the findings of Hare et al. (1999) and use it as a reason for urgency of to move forward on a TMDL Implementation Plan.

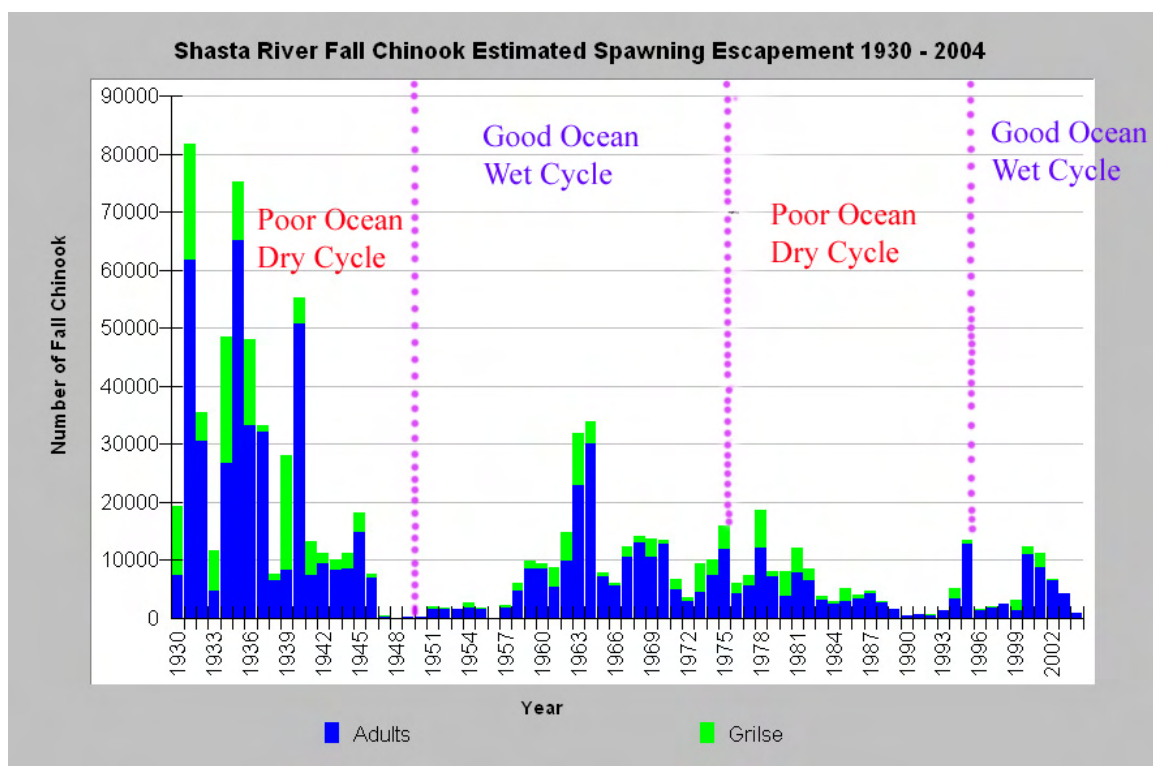


Figure 1. Shasta River Chinook salmon returns from 1930 to 2005 are displayed in this chart along with known Pacific Decadal Oscillation cycles (Hare et al., 1999).

The Shasta TMDL does not address the October 1 deadline for shutting off stock water and increasing stream flows for fish passage. Snyder (1931) noted that fall Chinook salmon entered the Shasta River in September. Fish now delay their migration until after October 1 because of lack of sufficient flow and associated warm water temperatures (Figure 2). This delayed pattern of entry into the Shasta River is manifest in both wet and dry years (Figure 3). Fall chinook forced to sit for weeks in stressful Klamath River conditions likely have reduced fecundity. This intensive selection pressure likely selects for later run timing. For discussion of similar impacts caused by Iron Gate Dam on mainstem spawning Klamath River fall chinook, see Kier Associates (2006).

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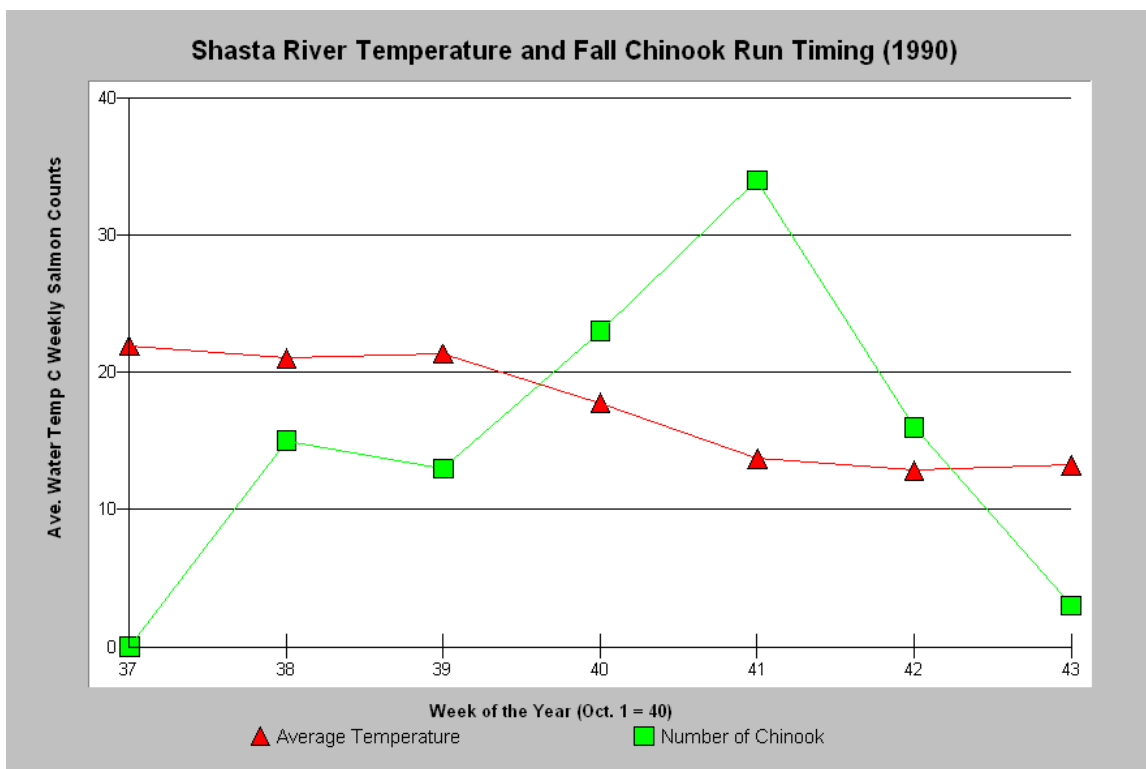


Figure 2. Increased flows with the end of stock water season decreased water temperature and triggered increased fall Chinook salmon migration into the Shasta River.

#### 1.4.10.5 Habitat and Fish Distribution

The distribution map (Figure 1.16) showing very limited range for steelhead likely is conservative, with steelhead very likely occurring in Parks Creek at least during high flow years. A map showing gradient would be useful to judge the former range of coho salmon, spring chinook and steelhead. Expanding habitat toward historical range under TMDL Implementation would substantially improve prospects of long term Pacific salmon species population viability and stability.

The fish distribution map indicates that Big Springs is not currently salmonid habitat yet the California Department of Water Resources (1981) *Klamath and Shasta River Spawning Gravel Enhancement Study* showed a huge concentration of fall chinook spawning Big Springs Creek. This is a tangible indication that Big Springs Creek was a major refugia for Pacific salmon in the early 1980's before reduction of flows due to ground water pumping. Figure 4 shows riparian destruction in lower Big Springs Creek and the adjacent reaches of the Shasta River that would also degrade fish habitat and lead to thermal pollution (Kier Associates, 1999).

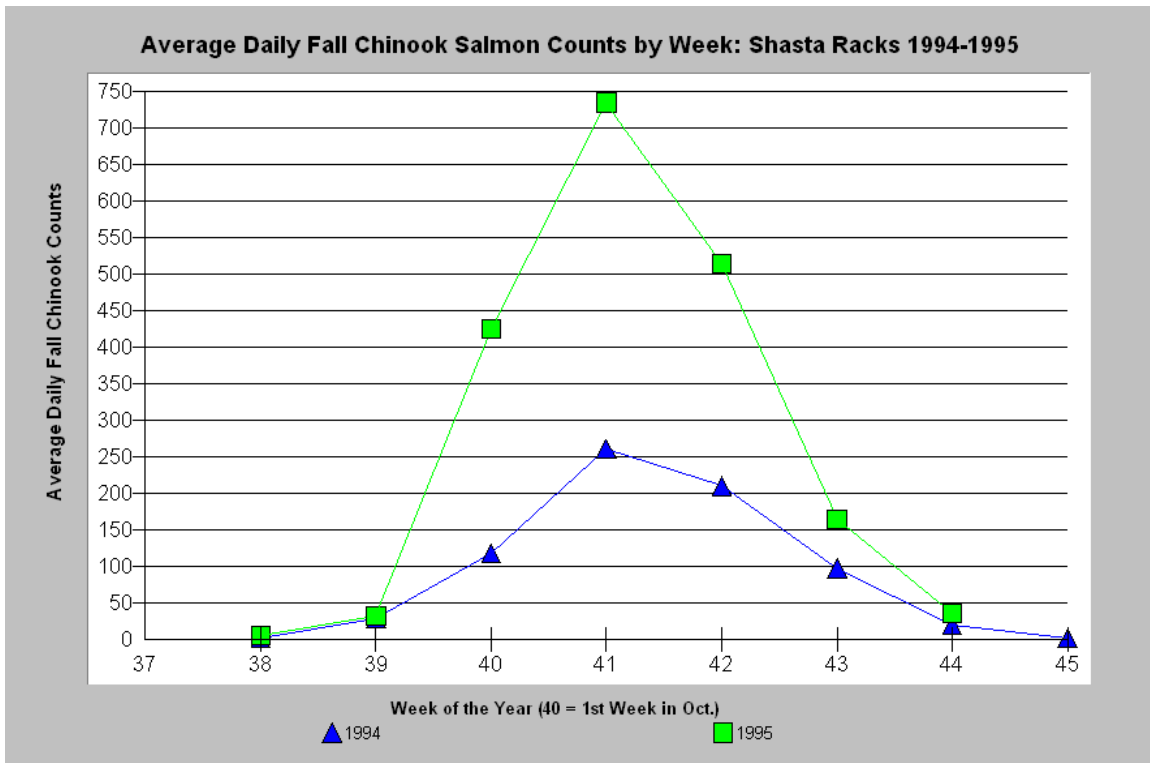


Figure 3. Fall chinook in 1994 and 1995 waited until the first week in October to move into the Shasta River because of increased flows at the end of the stock water season.



Figure 4. This photograph shows heavy equipment and excavation in the riparian zone of the Shasta River above Louie Road just upstream of the convergence with Big Springs Creek in January 1995. From Klamath Resource Information System V 3.0 (TCRCD, 2003).

## Chapter 2: Problem Statement

### 2.2.2 Water Quality Objectives:

Table 2.2 “Narrative and Numeric Water Quality Objectives applicable to the Shasta River basin TMDLs” should also include the *Basin Plan* water quality objectives for pH in the Shasta River. While the Shasta River is not officially listed as pH impaired, summer pH values in mainstem Shasta River are extremely high ( $>9.5$ ), and are unequivocally related to nutrients and D.O.

The lack of analysis of pH in TMDL is troubling, and deserves correction, for several reasons. First, pH directly affects salmonids, with pH levels above 8.5 being stressful and pH 9.6 being lethal (Wilkie and Wood 1995). For a more complete review of the effects of pH on salmonids, see Kier Associates (2005a). Second, ammonia toxicity increases with pH (U.S. EPA 1999). Third, high maximum pH and high diurnal ranges of pH are often symptomatic of nutrient enrichment and excessive growth of aquatic plants, which makes pH a highly useful index of photosynthesis. As described in Chapter 4, the primary cause of the low dissolved oxygen problems in the Shasta River is excessive respiration by aquatic plants. Analysis of pH data is a valuable tool to help understand the spatial and temporal dynamics of D.O. and nutrient impairment.

The mouth of the Shasta River has been monitored with automated water quality probes since 2000. Data from 2000-2004 show that maximum pH typically exceeds the *Basin Plan* objective of 8.5 for most days from June through September (Figure 5). TMDL Appendices A and C contains continuous pH data from other sites in the Shasta River. Goldman and Horne (1983) note that at pH of over 9.5 that all ammonium ions would be converted to dissolved ammonia, which is highly toxic to salmonids. These pulses of extreme pH occurred in seasons of downstream juvenile migration (June 2002) and during periods when adult Chinook salmon may be holding (September 2001) downstream of the mouth of the Shasta in the Klamath River.

### 2.3.1 Temperature Requirements of Salmonids

It is our opinion that this section presents the best available science, including from U.S. Environmental Protection Agency (2003).

### 2.3.2 Temperature Conditions of the Mainstem Shasta River

This section presents colorful and useful graphics (i.e. Figure 2.1) that show the seasonal variability versus life history requirements, duration of stressful conditions and the temperature profile of the river from Dwinnell Dam to the convergence with the Klamath River.

The TMDL states on page 2-12 that “Weekly maximum temperatures exceed the spawning, incubation, and emergence threshold (i.e. MWT of  $13^{\circ}\text{C}$ ) at all Shasta River reaches from April through June, and during the second half of September.” An examination of Figure 2.1 shows that to be incorrect because temperatures are above  $13^{\circ}\text{C}$  until mid-October, not September. This should be corrected.

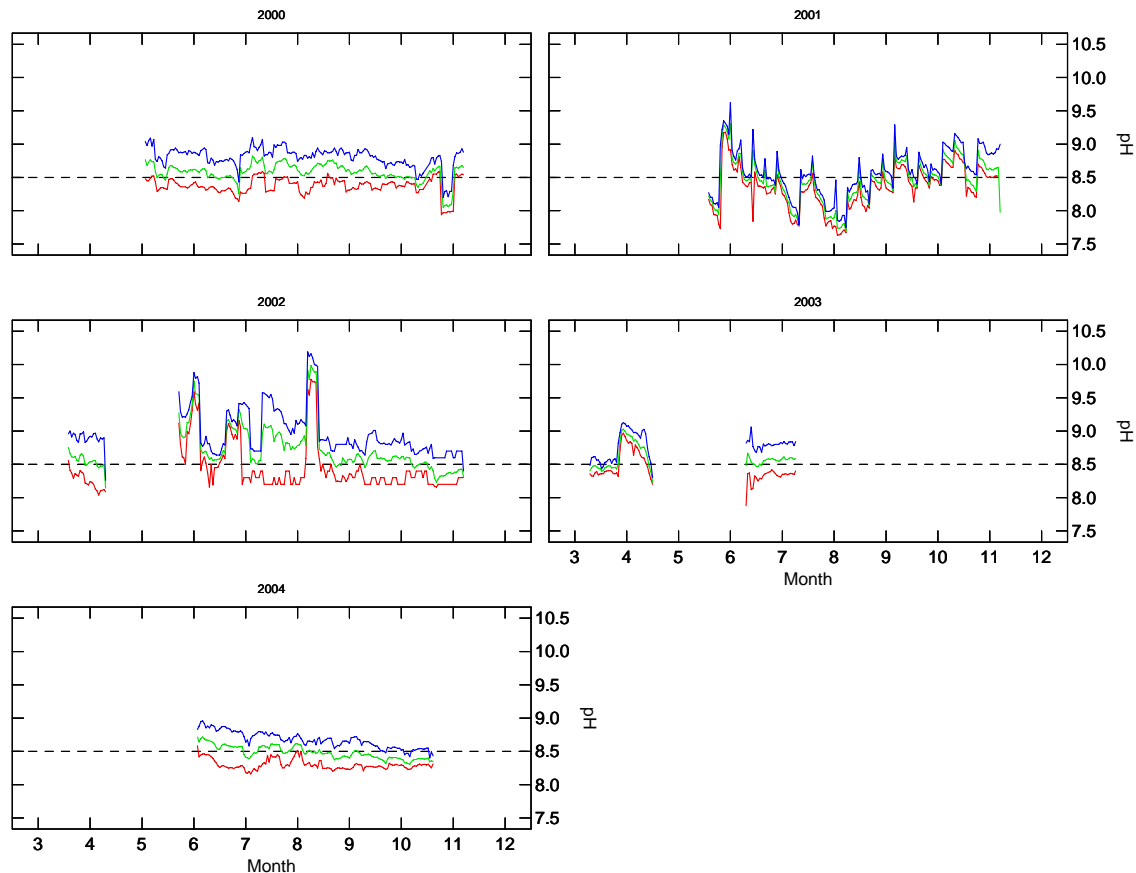


Figure 5. Daily **minimum** (red), **average** (green) and **maximum** (blue) pH for the Shasta River near its mouth (site SH00) for the years 2000-2004 with a reference values showing the NCRWQCB (2001) maximum pH standard of 8.5. Data are from the *Klamath TMDL* database, with data originally collected by the U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, and USGS. [2002 is actually a collection of two datasets].

## 2.5 Biostimulatory Substances:

pH should also be specifically mentioned in this sentence on page 2-24, “In this context for the Shasta River TMDL, Regional Board staff define nuisance aquatic growth as that which contributes to violation of numeric water quality objectives (particularly dissolved oxygen) or adversely affects beneficial uses.”

### 2.5.1 Nutrient Criteria and Trophic State Thresholds

This section of the TMDL should mention that site-specific data analyses are required to set meaningful nutrient criteria (Tetra Tech, 2004).

We recommend that this section start with this paragraph:

“Nutrients do not directly affect salmonids, but impact them indirectly by stimulating the growth of algae and aquatic macrophytes to nuisance levels that can adversely impact dissolved oxygen and pH levels in streams. The concentration of nutrients required to cause nuisance levels of periphyton

varies widely from one stream to another. Detailed data analysis is required to determine relationships. U.S. EPA (2000) and Tetra Tech (2004) provide excellent summaries of the literature on these analytical methods and will not be repeated here. Such analyses have not yet been conducted on the Shasta River, so in this section we discuss national (USEPA 1986), regional (USEPA 2002), and international (Dodds et al. 1998) literature.”

The Dodds et al. (1998) reference is relied upon far too heavily, perhaps even misapplied, in this section of the TMDL. The trophic categories in Dodds et al. (1998) were derived from looking at the distribution of nutrient concentrations in many streams and then arbitrarily dividing them up into three statistically equal categories; they are not based on any type of ecological functionality.

EPA (2000) provides the following cautionary note about Dodds et al. (1998):

“It should be stressed that this approach proposes trophic state categories based on the current distribution of algal biomass and nutrient concentrations which may be greatly changed from pre-human settlement levels.”

In other words, it is likely that the population of streams used by Dodds et al. (1998) are skewed towards more impaired streams, thus the nutrient concentrations for the trophic boundaries are skewed high. In particular, the 0.7 mg/L total nitrogen value presented by Dodds et al (1998) as the oligotrophic-mesotrophic boundary is highly suspect. Note that USEPA’s (2002) recommended ecoregional nutrient criteria for total nitrogen is 0.12 mg/L, more than 5 times lower than the 0.7 mg/L from Dodds et al. (1998). Based on analysis of nutrient, pH, D.O., and periphyton data in the Klamath, Trinity, and Salmon Rivers, Kier Associates (2005a) recommended a total nitrogen criteria of 0.2 mg/L for the lower Klamath River.

As noted above, the nutrient concentration required to cause impairment in a stream varies widely according to many factors, thus the more specific the analysis the better. Thus, we cannot see any justification for the TMDL to use the numbers presented Dodds et al. (1998) derived from across North America and New Zealand, rather than the USEPA (2002) criteria derived from data in Nutrient Ecoregion II (Western Forested Mountains) of the western United States. We recommend that both Dodds et al. (1998) and USEPA (2002) remain in the literature review presented in 2.5.1, but that when analyzing Shasta River nutrient data in section 2.5.2 (Shasta River Watershed Nutrient Conditions), the USEPA (2002) recommended criteria should be used instead.

## 2.5.2 Shasta River Watershed Nutrient Conditions

### 2.5.2.1 Total Phosphorus

On page 2-28, the following statement is made:

“Downstream of the headwaters, Beaughton and Boles Creeks enter the Shasta River from the west and flow through the phosphorus rich volcanic soils flanking Mount Shasta. This is reflected in the high total phosphorous values in these creeks with averages of 0.192 and 0.119 mg/L respectively.”

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The land use map (Figure 1.12) clearly indicates that the watersheds of Beoughton and Boles Creek contain an urbanized area around Weed that may also be a substantial contributor to phosphorus concentrations. Development is widely recognized to increase nutrient concentrations in streams (U.S. EPA, 2000). While we agree that the high phosphorus concentrations in Beoughton and Boles Creek are likely due in part to natural geology, they are also likely exacerbated by land use, and this should be acknowledged in the TMDL.

#### 2.5.2.2 Total Nitrogen

As noted above in comments on Section 2.5.1, Shasta River nutrient data should not be compared to Dodds et al. (1998), but to USEPA (2002).

In regard to Beoughton and Boles Creek, page 2-29 of the TMDL states “Although total phosphorus levels are high in these tributaries, total nitrogen levels are generally low.” We disagree with this assertion; nitrogen concentrations in Boles Creek are high. The TMDL should also recognize that the form of nitrogen is also important (as inorganic forms of nitrogen such as ammonia and nitrate are available to immediately stimulate plant growth). While total nitrogen at Boles does lie slightly below Dodds et al.’s oligotrophic-mesotrophic boundary, nitrate plus nitrite concentrations are very high. We suggest the following revision. Replace “Data from Boles creek generally reflect oligotrophic conditions, with average total nitrogen measuring 0.69 mg/L.” with “Data from Boles creek indicate that total nitrogen there are higher than Beoughton Creek, with average total nitrogen measuring 0.69 mg/L, far above USEPA (2002) recommended nutrient criteria of 0.12 mg/L. Additionally, inorganic forms of nitrogen were high, with nitrate plus nitrite nitrogen ranging from 0.360 to 0.560 and an average of 0.493.”

The statement “Total nitrogen values in springs are generally within the mesotrophic boundary” (p 2-30) is inconsistent with the rest of the nutrient discussion. The statement should be changed to “Total nitrogen values in springs are several times higher than the USEPA (2002) recommended ecoregional criteria.”

Little evidence is provided to support the statement that “Maximum total nitrogen levels in the mainstem Shasta River increase in a downstream direction.” Table 2.8 provides total nitrogen data on the Shasta River near the headwaters, Shasta River above Dwinnell, and then lumps all mainstem sites below that as “Shasta River below Dwinnell Dam.” To support that statement, the sites below Dwinnell Dam should be analyzed individually. Appendix B of the TMDL contains USGS and RWB data from 2002-2003 indicating that the patterns at sites below Dwinnell Dam are complex and that analysis of the data is confounded due to the use of a laboratory with inadequate detection limits for Kjeldahl nitrogen.

#### 2.6.3 Potential Municipal and Domestic Water Supply and Contact Recreation Impairment

Discussions of Dwinnell Reservoir in Section 2.5.2 note increased nutrients as compared to reaches of the Shasta River above, but do not mention the role of the nitrogen-fixing blue green algae *Anabaena flos-aquae* as one of the sources of nutrient pollution (though it is later



in the document in Chapter 4). *Anabaena flos-aquae* is correctly noted in the text to be a producer of anatoxins.

## **Chapter 3: Temperature Source and Linkage Analysis**

### 3.1.1 Stream Heating Processes

This section presents a good description of how the Shasta River warms.

### 3.3 Stream Heating Processes Affected by Human Activities in the Shasta River Watershed

#### 3.3.2 Shade

On page 3-6, there is discussion of a reach at river mile 37.3 shown in Figure 3.2 where the riparian vegetation noticeably changes from sparsely vegetated to densely vegetated, coincident with a 4 degree drop in temperature. It seems unlikely that riparian vegetation would rapidly cool temperatures by 4 degrees C. As Dr. Coutant points out in the peer-review (Appendix I) another possibility is that hyporheic exchange cooled the water. For details, see our comments under 3.3.7, a new section that we request be added to the TMDL.

#### 3.3.3 Tailwater Return Flows

The attribution of warming in Big Springs Creek to diversion and agricultural return water is correct, although less than optimally illustrated by the TIR image presented (Figure 3.6). Page 3-8 states that "...Big Springs Creek, where a tailwater return flow was 9.2°C warmer than the creek and caused a plume of hot water that extended for hundreds of meters (Figure 3.6)." We have examined this figure closely, and do not see the effect described. We are unable to determine if the effect does not exist, or if it is problem with image quality.

#### 3.3.4 Flow and Surface Water Diversions

The Shasta TMDL does not present the thermal evidence (Watershed Sciences 2004) that flow depletion is causing stream warming in tributaries Parks Creek and the Little Shasta River. Data and TIR images show temperature oscillations in Parks Creek and the Little Shasta River that indicate these streams warm as their flows are depleted (Figure 6). Kier Associates (2005b) described a similar effect on Shackleford Creek in the Scott River. Diversion also completely dries up reaches that would otherwise be suitable habitat for salmonids (Figure 7). Changing patterns of diversion on lower Parks Creek would provide a cold water reach connected to the mainstem Shasta River that could serve as a refugia for juvenile salmonids.

U.S. EPA (2003) points out the need to protect and restore well distributed refugia when other factors confound meeting temperature requirements of salmonids in mainstem environments. Hydrologic connectivity of Parks Creek is also needed for spawning gravel recruitment in the Shasta River below Dwinnell Dam. Kier Associates (1999) noted that: "Without a change in winter flow regimes to allow increased gravel supply from Parks Creek to enter the Shasta River, long-term depletion of spawning gravels for salmon and steelhead is inevitable."

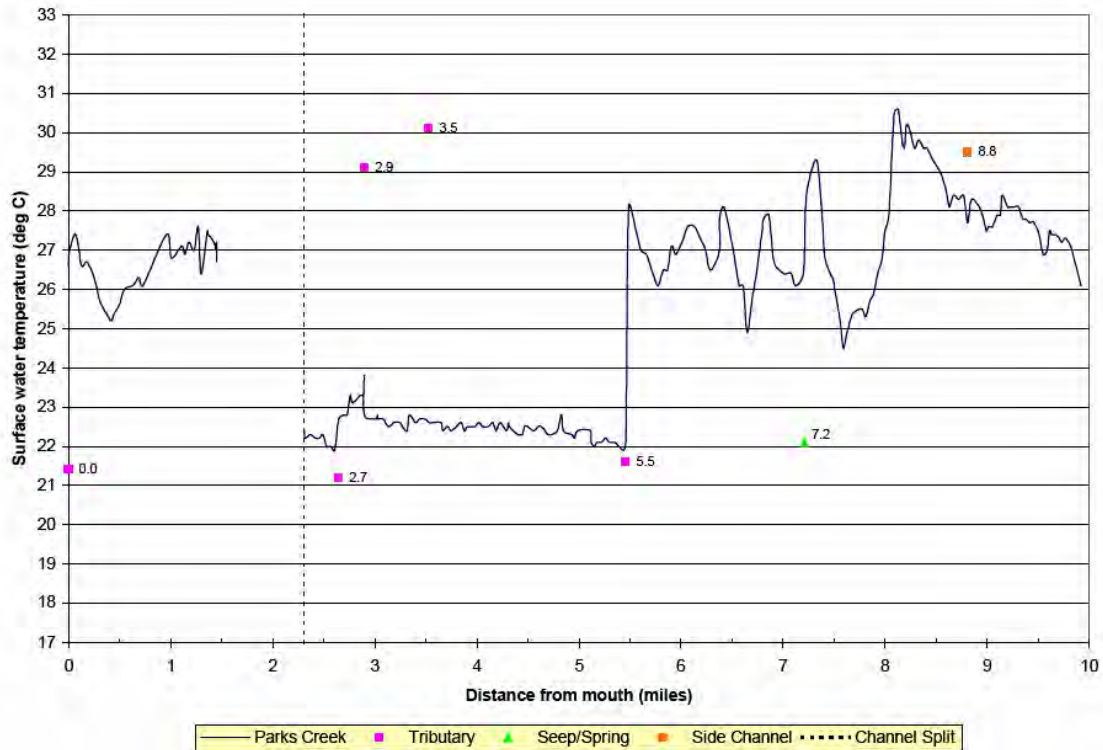


Figure 6. This temperature profile of Parks Creek from Watershed Sciences (2004) shows that at the top of the monitoring reach, water temperatures are already elevated by upstream diversions. Spring flows feed the stream above river mile 5 (RM 5) and cool it, but diversions dry the channel just above river mile 2 (RM 2.3).

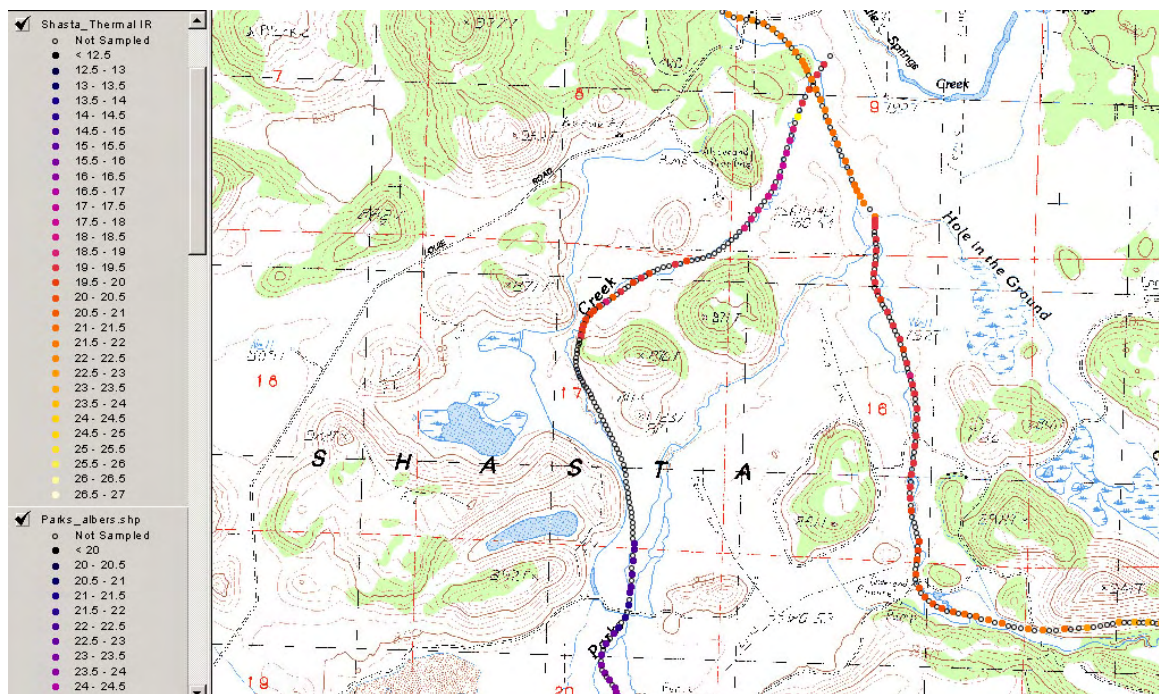


Figure 7. Thermal Infrared radar (Watershed Sciences, 2004) of lower Parks Creek. Stream is cold enough for salmonids but drained by diversion before reaching the Shasta River.

### 3.3.5 Groundwater Accretion / Spring Inflows

This section of the TMDL contains good discussions of why groundwater accretions and spring inflows are important to water temperatures in the Shasta River; however, it does not note that groundwater accretions and spring inflows are not included in the TMDL's water quality model.

Table 6 in Appendix D shows the "Hydrodynamic input locations and types" (e.g. the locations of types of inflows and outflows included in the models). The only specific inputs included were Parks Creek (rm 34.94), Big Springs (rm 33.71), and Yreka Creek (rm 7.88). Other inflows are included as distributed inflows. As noted in Appendix D, temperatures for "all accretions between GID and Anderson Grade" (that reach covers most of the mainstem Shasta below Dwinnell Dam) were assigned the temperature of the Shasta River at Anderson Grade. In other words, it appears as though all springs and groundwater accretions, such as the spring shown in figure 3.9, were assigned Shasta River water temperatures. This seems problematic as the springs are much cooler than the Shasta River water.

### 3.3.7 Hyporheic function

We propose that a short section on hyporheic function be added here.

Connection of surface water to these sub-surface waters is recognized as having a potential cooling influence (Poole and Berman, 2001; U.S. EPA 2003). It is important to note that this is a different mechanism than springs or groundwater accretion. It is not "new" cool water that dilutes the warm river water, but rather that warm river water enters the sand/gravels of the hyporheic zone and then re-emerges cooler, with no net effect on the amount of water in the stream. While magnitude and distribution of this effect in the Shasta River is unknown, it may be significant (and likely the cause of the cooling described in section 3.3.2 and shown in Figure 3.2). As Dr. Coutant mentioned in his review, the model could potentially simulate this effect:

"For hyporheic flow, if you have some idea of the rate of flux in and out of the gravel, you could treat the flux into the gravel as withdrawal from the stream (water of ambient quality) and replace it downstream with distributed inflow representing the flux out of gravel (with water quality of the hyporheic flow)"

As noted by Dr. Coutant, failing to include this mechanism in the model may result in an over-estimation of the effect of shade. We recognize that the Regional Water Board will be reticent to conduct additional modeling work at this stage of TMDL development, but as research in the Shasta River continues this should be conducted in the future.

A major problem in the Shasta River that may have disrupted hyporheic function is the mining of hundreds of thousands of yards of gravel from the Shasta River when highway Interstate 5 was built (Kier Associates 1991). Virtually all alluvium was removed and replenishment is blocked by Dwinnell Dam and by de-watering of tributaries that formerly contributed both water and gravel to the mainstem (Kier Associates, 1999). Restoring

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connectivity of tributaries with the mainstem could increase spawning gravel supply and ultimately recreate some hyporheic function as well.

#### 3.3.8 Timber harvest

We propose that a short section on timber harvest be added here.

Timber harvest activity in upper Parks Creek (Figure 7) is likely having similar effects as in the Scott River, described by Kier Associates (2005b). Logging in rain-on-snow prone watersheds leads to increased sediment yield and peak discharge that in turn widens stream channels and contribute to increased water temperature. Although the introduction of the *Shasta TMDL* mentions logging as an historic activity, it appears active in upper Parks Creek. Lingering cumulative effects, such as high road densities, skid roads and early seral forests, are likely triggering increase sediment yield, increased flood flows and decreased summer base flows. Kier Associates (2005b) pointed out that dry upland forest sites may require decades for recovery due to slow tree regeneration, causing an extended window of cumulative watershed effects related to flow.



Figure 7. An orthophoto quad image of upper Parks Creek shows high road densities, numerous skid trails and clearcuts.

## **Chapter 4: Dissolved Oxygen Source and Linkage Analysis**

### 4.3 Processes Affecting Dissolved Oxygen Concentrations in the Shasta River Watershed

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The third paragraph of section 4.3 on page 4-3 (beginning with “Though...” ) should be revised. Characterizing Shasta River biological oxygen demand (BOD<sub>5</sub>) as “relatively low” in comparison to raw sewage and hyper-eutrophic Upper Klamath Lake is not at all appropriate. As coldwater salmonid habitat they are much higher than optimal. We do agree that Shasta BOD<sub>5</sub> concentrations are low in the sense that they are not the major factor driving D.O. dynamics in the Shasta River. We suggest that paragraph should be replaced with the following revision:

“Though the data are limited, BOD<sub>5</sub> concentrations (a measure of carbonaceous deoxygenation in the water column) in the Shasta River indicate that carbonaceous oxygen demand exerted in the water column is only a minor component of the total oxygen demand in the Shasta River. BOD<sub>5</sub> concentrations in the Shasta River range from 1.0 to 15.0 mg/L, with an average of 2.1 mg/L. For comparison, biochemical oxygen demand concentrations in the Klamath River near the outlet of hyper-eutrophic Upper Klamath Lake range from approximately 5 to 25 mg/L. Also for comparison, a typical biochemical oxygen demand concentration of untreated domestic sewage in the United States is 220 mg/L (Chapra 1997, p. 358).”

#### 4.3.3.2 Factors Affecting Aquatic Vegetation Productivity in the Shasta River

Biggs (2000) is the best reference regarding periphyton growth, and should be cited in this section. The following sentence should be added to the end of the first paragraph of this section on page 4-11: “Biggs (2000) provides a comprehensive review of the factors affecting periphyton growth.”

#### *Flow and Current Velocity*

The statement on page 4-12 “In addition, when a scour-event washes the vegetative material out of the Shasta system, there is a decrease in the oxygen demand exerted on the river” should be followed by a mention of how this might affect the Klamath River. We suggest the following: “However; it should be noted that this material could potentially have negative consequences downstream in the mainstem Klamath River, depending upon the time of year and if it settled out or kept moving out to the Pacific Ocean.”

#### *Nutrient Concentrations*

The last paragraph in this section (beginning with “Section 2.5 provides an overview of trophic status boundaries associated with nutrients...” ) contains numerous references to trophic boundaries based (apparently) on the Dodds et al. (1998) reference. As explained above in comments on section 2.5.1s, the trophic boundaries presented in Dodds et al. are arbitrary and do not have much relevance to the Shasta River, so this section should be revised to reference ecoregional criteria from USEPA (2002) instead of Dodds et al.

### 4.4 Anthropogenic Effects on Shasta River Dissolved Oxygen Conditions

#### 4.4.1 Tailwater Return Flow Quality

The most important mechanism by which tailwater returns affect D.O. is not included in the bullets on page 4-15, an omission which deserves correction. Tailwater returns are increasing nitrogen levels in the Shasta River, which can increase growth of aquatic plants.

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As shown in Chapter 7, respiration of aquatic plants, stimulated by high nutrient levels, is by far the largest contributor to dissolved oxygen demand in the Shasta River. While it is worthwhile to mention that tailwater returns do increase nitrogenous oxygen demand of the Shasta River, the most significant effect of tailwater on oxygen demand is to increase total nitrogen levels and stimulate aquatic plant growth. We recommend that a new second bullet be added:

“The average total nitrogen concentration of tailwater return flows is over two times that of the average Shasta River concentration during the irrigation season (XX and XX [fill in the appropriate values] mg/L, respectively). This increase in nitrogen stimulates the growth of aquatic plants, substantially contributing to oxygen demand by increasing respiration.”

Also, table 4.3 should also include total nitrogen calculated from individual samples as  $\text{NO}_3 + \text{NO}_2 + \text{TKN}$ .

#### 4.4.3 Lake Shastina and Minor Impoundments

This section does not mention two of Lake Shastina’s most important effects on oxygen demand in the Shasta River:

1. Shastina reduces peak flows, allowing organic matter and fine sediments to accumulate in the channel, contributing to oxygen demand via macrophyte respiration, and
2. Shastina increases nitrogen concentrations, stimulating aquatic plant growth and hence contributing to oxygen demand via macrophyte respiration.

We recommend the following text be added in a new paragraph at the bottom of page 4-19 (after “...may occur in the Reservoir”):

“As discussed above in section 4.3.3.2, Lake Shastina substantially reduces scouring peak flows. This allows organic matter and fine sediments to accumulate in the channel. These are the preferred substrates for aquatic macrophytes, so this effect expands the area of suitable habitat for macrophytes, increasing the amount of macrophyte photosynthesis and respiration in the Shasta River.”

We recommend the following text be added in a new paragraph near the bottom of page 4-19 (above “The regular occurrence of algal blooms...”):

This increase in total nitrogen concentrations fuels the growth of aquatic plants, which in turn contributes to oxygen demand by increasing aquatic plant photosynthesis and respiration.

Also, because not all blue green algae can fix nitrogen (i.e. *Microcystis aeruginosa* cannot), the statement “Blue green algae are capable of sequestering atmospheric nitrogen.” should be changed to “Like many blue green algae, *Anabaena flos-aquae* is capable of sequestering atmospheric nitrogen, resulting in the potential for additional nutrient pollution.”

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#### 4.4.5 Flow

This section does not mention a third important way in which flow affects dissolved oxygen. We recommend that the following text be added to the last sentence in this section (after “...caused by photosynthesis and respiration.”) on page 4-21:

Third, flow can affect dissolved oxygen through its effects on water temperature. For instance, larger volumes of water have a higher thermal mass are more resistant to heating and cooling. So if a large volume of water is cool (i.e. from a spring-fed creek such as Big Springs) it can travel downstream and retain its low temperature. Low temperatures allow water to hold more dissolved oxygen. Through this mechanism, flow can affect dissolved oxygen.

### **Chapter 5: Analytical Approach and Methods**

#### 5.2 Analytic Approach and Model Selection

For reasons discussed above in our comments on section 4.4.5, the following sentence should have “water temperature,” inserted after “sediment oxygen demand rates,”:

Further, as outlined in Chapter 4, dissolved oxygen concentrations of the Shasta River depend on photosynthetic and respiration rates of aquatic vegetation, sediment oxygen demand rates, consumption of oxygen via nitrification and biochemical oxygen demand, and flow.

#### 5.6 RMS Sensitivity Analysis

We recommend the following addition to the section (extracted from Appendix D, with some edits):

With respect to dissolved oxygen, CBOD, and NBOD decay rates were largely insensitive (meaning they had little effect on model outputs), as was the SOD rate. The driving factor for dissolved oxygen was maximum photosynthetic and respiration rate. These values were adjusted during calibration to fit the model to measured data. Reaeration rate, a calculated term within the model, played a pivotal role, particularly in the steep canyon reach where mechanical reaeration would be expected to occur.

### **Chapter 6: Temperature TMDL**

Overall, this chapter appears to be based on sound analyses. We applaud the Regional Water Board for including flow increases from Big Springs in its Water Quality Compliance Scenario, as flow depletion is a long recognized problem in the Shasta River Basin, and good evidence is provided as to how this flow increase would affect water quality.

#### 6.2 Water Quality Compliance Scenario Conditions

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### 6.2.3 Tributary Temperatures

#### 6.2.3.1 Big Springs Creek

The discussion of how 4°C lower than baseline was chosen for the Water Quality Compliance Scenario should be explained more clearly (we cannot make sense of it in its current form).

### 6.6 Margin of Safety

On page 6-19, the following statement is made:

Some improvements in stream temperature that may result from reduced sedimentation are not quantified. Reduced sediment loads could lead to increased frequency and depth of pools, independent of changes in solar radiation input. These changes tend to result in lower stream temperatures overall and tends to increase the amount of lower-temperature pool habitat. These expected changes are not directly accounted for in the TMDL.

While it is true that reducing sediment loads would likely decrease stream temperatures (and it should be noted that increased rates of hyporheic exchange are another mechanism by which this would occur), it is not clear what basis the Regional Water Board has for stating that sediment load are going to decrease. If this statement is to remain in the TMDL, it should be specified *why* sediment loads are going to decrease, otherwise this is not a margin of safety, it is theoretical statement.

## **Chapter 7: Dissolved Oxygen TMDL**

### 7.2 Algae Box Model Application and Results

#### 7.2.2 Summary and Conclusions

We agree with the statement on page 7-4 that “If TIN concentrations in the Shasta River were maintained at levels comparable to those concentrations measured in the headwaters of the Shasta River, aquatic vegetation biomass would likely be reduced.”

### 7.3 RMS Model Application

#### 7.3.2 Photosynthetic and Respiration Rates

On page 7-5, the TMDL states:

The photosynthetic and respiration rates assigned for the water quality compliance scenario were 50% of those for the existing (baseline) condition, as shown in Table 7.3. These reductions in photosynthetic and respiration rates assume a 50% reduction in aquatic vegetation standing crop during the simulation periods. Regional Water Board staff believe that such reductions in aquatic vegetation standing crop, and associated reductions in photosynthetic and respiration rates, are achievable in the Shasta River.

No reason is stated for why a 50% reduction in photosynthetic and respiration rates was chosen. With no reason provided, the decisions seems arbitrary. The TMDL then states: “In practice, the mechanisms that would result in these reductions include:

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- Decreased light availability to aquatic vegetation via increased riparian shade, as outlined in Section 6.2.1;
- Reduced concentrations of biostimulatory nutrients in the Shasta River achieved via controls targeting NBOD reductions from Lake Shastina outflow, irrigation return flows, and Yreka Creek, as outlined in Section 7.3.3;
- Reduced fine sediment inputs from irrigation return flows that can be achieved via controls targeting NBOD reductions, as outlined in Section 7.3.3; and
- Increased flushing flows to scour the channel of accumulated fine sediments that promote the establishment and proliferation of rooted aquatic macrophytes.
- Reduced stream temperatures, as outlined in Chapter 6.”

While we agree that these mechanisms would indeed reduce the photosynthetic/respiration rates, it is unknown how much each of these factors would need to change in order to result in a 50% reduction in the photosynthetic/respiration rates. The quantitative relationships between each of these factors and the photosynthetic/respiration rates is not known. This uncertainty should be acknowledged in the text.

Furthermore, as we have stated above several times, it is not NBOD that causes dissolved oxygen problems in the Shasta River, it is total nitrogen. As shown in table 7.7, NBOD is only 7.9% of the oxygen load for the baseline condition; respiration of aquatic plants is 73.9%. Therefore, “NBOD” in the bullet points above should be replaced with “NBOD and total nitrogen”

While it is important to acknowledge scientific uncertainty, we also believe that since the factors causing D.O. problems are known, there is no need to wait until we have 100% certainty on the magnitude of land/water use changes that are required to bring the Shasta River into compliance with the water quality objectives. The best strategy is to continue with restoration efforts, and then evaluate progress along the way.

## Chapter 8: Implementation

The RWB has an obligation to make sure that the water quality objectives are met, and beneficial uses restored and protected, particularly because the final *Shasta TMDL Action Plan* will be amended to the *Basin Plan* (NCRWQCB, 2001). If there are multiple ways to meet the objectives, we support giving landowners the flexibility to decide how they want to meet those objectives. For example, if other regulatory and policy processes such as the *Shasta Incidental Take Permit* (SRCD, In Draft), *Coho Recovery Plan* (CDFG, 2004), and Timber Harvest Plans will result in the attainment of water quality objectives, then further regulation by the RWB is not necessary.

Duplicative and overlapping regulation benefits no one. Unfortunately, these other processes often rely on voluntary measures that neither guarantee that water quality problems will be remedied nor that TMDL objectives will be achieved. When other policy

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approaches and voluntary landowner actions fail to achieve the TMDL objectives, then the RWB must use its considerable regulatory and enforcement authority to take necessary actions to ensure results.

The implementation actions requested in these comments are summarized below as Table 1 (a revised version of Table 4 from the proposed Shasta TMDL Basin Plan amendment language).

#### 8.1.1 Prioritization of Implementation Actions

Page 8-6 states “Where reaches of the Shasta River and its tributaries are providing suitable freshwater salmonid habitat, protection of these areas should be a priority for restoration efforts.” While this is a step in the right direction, it could be improved by specifically mentioning coho salmon, coldwater refugia needs and connectivity.

The Shasta TMDL should follow the approach of Bradbury et al. (1995), which is to identify the most intact habitat patches and to begin restoration by making sure that these areas are protected and enhanced as a top priority. In the Shasta River basin, these would be the stream reaches with coho salmon or those that provide coldwater refugia for other Pacific salmon species. The *Shasta TMDL* needs to add specific reference to lower Parks Creek and the need to restore riparian there and change diversion to provide a refugia and to improve spawning gravel supply to the mainstem Shasta River.

#### 8.3 Tailwater

We recognize that tailwater returns are a substantial contributor to water quality problems, and we support the recommendations in this section.

#### 8.4 Water Use and Flow

The water quality compliance scenario in Chapter 6 includes a 50% increase in flow from Big Springs Creek. We strongly support that decision; however the TMDL implementation does not lay out a clear path for how such a substantial increase in flow could be achieved. To be realistic, it will also have associated cost factors for assisting water conservation to offset the current demand for groundwater. Some language should likely be added to reflect this long term need.

The RWB proposes to take no firm action to increase flows to improve water quality for five years, which seems like a long wait given the stock status of Klamath River salmon (Kier Associates, 2006). We support the RWB in taking action, and think that two years would be a more reasonable amount of time to wait. A quote from the *Long Range Plan for Klamath River Basin Fishery Restoration Program* (Kier Associates, 1991) gives a sense of long term perspective:

“In the year 2000, if adequate progress towards improving flow conditions for salmonids has not been made .... then investigate the option of reallocation of water rights under the public trust doctrine for protection of fish habitat.”

While many of the ideas proposed in the *Coho Recovery Plan* are positive, they are also voluntary. It is important for the Regional Water Board to remember that it has a

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responsibility to protect public trust resources and ensure results. If voluntary measures work, that would be great, but they are often insufficient and further action is required.

Chapter 8 states that: “Other management measures recommend the leasing, purchasing, or donations of water rights from willing water rights holders in the Shasta River watershed.” While purchasing or donations could provide long-term benefits to fish and water quality, leases would be unwise because they provide no long-term benefits. A major hurdle for success, if water rights are acquired, is that riparian water users are likely to exploit any water not used by those contributing water. The original Shasta River adjudication (CDPW, 1932) recognized that problem and it still has not been remedied. today. Before water rights are purchased, restrictions on water withdrawal under riparian rights must be disallowed, which likely requires another adjudication. Legality of some water rights also needs to be explored because ground water diversions that are linked to surface flow depletion require an Appropriative Water Right and diversions from the underflow of Big Springs have not obtained such rights (Kier Associates, 1999). The TMDL should also note that water rights holders may designate temporarily their water right to instream flow under California law SB-301, without penalty of losing that right at a future date (Kier Associates, 1999).

## 8.5 Irrigation Control Structures and Impoundments

### 8.5.1 Implementation Actions for Irrigation Control Structures and Minor Impoundments

The reference “(Great Northern Corp. 2001)” should be added after “1996” to the statement “The Shasta CRMP, working with cooperative landowners, has removed one impoundment in 1996, the farthest downstream...”

## 8.6 Lake Shastina

This statement on page 8-25 has several problems and needs correction:

“Additionally, nutrient inflows (Chapter 4) from natural sources to the reservoir appear to be significant, but nutrient loads from the outflow of Shastina exceed inflow loads, on an annual basis, suggesting that Lake Shastina is an additional source capable of generating its own nitrogenous oxygen demanding substances.”

First, the TMDL does not contain any data/analysis regarding Lake Shastina nutrients loads (loads are mass per time, e.g. kg/year), only concentrations (e.g. mg/L). The sentence should be corrected by replacing “loads” with “concentration” (or if the Regional Water Board does have information about loads, it should be presented). Second, as we have stated above several times, it is not NBOD that causes dissolved oxygen problems in the Shasta River, it is total nitrogen. Therefore, “nitrogenous oxygen demanding substances” in the sentence above should be replaced with “nitrogen, affecting dissolved oxygen conditions downstream by increasing nitrogenous oxygen demanding substances and stimulating growth of aquatic plants.”

The statement on page 8-25 that “10) appropriate actions, based on the investigation’s results, to reduce nitrogenous oxygen demand, thereby, increasing dissolved oxygen concentrations in Lake Shastina and, thus, discharges from Dwinnell Dam to the Shasta

River.” we recommend that “nitrogenous oxygen demand,” should be replaced by “total nitrogen and nitrogenous oxygen demand”

Two other statements on the same page should be similarly revised by replacing “nitrogenous oxygen demand” with “total nitrogen and nitrogenous oxygen demand”:

“Initiate, complete, and submit to the Regional Water Board the results of an investigation characterizing, quantifying, and analyzing the sources of nitrogenous oxygen demanding substances contributing to low dissolved oxygen levels affecting the beneficial uses of water in Lake Shastina and to waters of the Shasta River downstream from Dwinnell Dam.

Based on the results of the investigation, the Regional Water Board shall determine appropriate implementation actions necessary to reduce the nitrogenous oxygen demand that is lowering dissolved oxygen concentrations in Lake Shastina and affected areas downstream from Dwinnell Dam.”

Lake Shastina has substantially changed the hydrology of the Shasta River, decreasing peak stormflows and reducing the frequency of high flows that can scour fine sediments and aquatic plants. For this reason, we request that the following language be added to this section “The Regional Water Board shall study the possibility of using pulse flows from Lake Shastina to clean out accumulated organic matter and macrophytes from the Shasta River. The study will also consider the effects of such pulse flows on the Klamath River downstream.”

#### 8.8 Urban and Suburban Runoff

This section neglects to mention planning and design as important means to manage urban and suburban runoff. Runoff pollution is much easier to minimize and manage if stormwater is considered during the design phase. We recommended the addition of the following language:

“New developments should be designed to minimize stormwater runoff and maximum infiltration by minimizing impervious surface area, minimizing hydrologic connection between impervious surfaces and watercourses, and constructing stormwater retention basins. Existing developments should be retrofitted to minimize stormwater runoff.”

#### 8.10 United States Bureau of Land Management

This section should specifically reference staff for enforcement. BLM lands in the Shasta River canyon include extremely important Chinook salmon spawning habitat and juvenile salmon and steelhead rearing habitat. Grazing in violation of BLM policies has taken place illegally in the past and may recur if occasional enforcement presence is not in evidence. Illegal residences on BLM land off Hudson Road have not been removed and residents are harvesting firewood from the riparian zone on public land.

### **Chapter 9: Monitoring**

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If the RWB staff are not prepared to present a monitoring plan with the *Shasta River TMDL*, they should at least specifically mention on-going monitoring that should be continued for long term trend monitoring. The CRMP gauge at Montague-Grenada Road, USFWS multi-channel data recorder, USGS flow monitoring and annual deployment of automated temperature sensing probes. The TMDL should specifically reference need to store and share data in a way that supports TMDL implementation and adaptive management. The Klamath Resource Information System (TCRCD, 2003) is available for use by the community and the major expense of populating the database has been paid by previous grants. Cooperative efforts between the RWB, Tribes, agencies and stakeholders would not cost much if each partner dedicated a few days of staff time a year.

## **Conclusion**

The Shasta TMDL comes at a time when Klamath River fall Chinook salmon stocks are collapsing, due to water quality problems and consequent disease epidemics (Kier Associates, 2006). Unlike other mountains throughout the West, snowpack on Mt Shasta is increasing with the onset of global warming, making the Shasta River an even more important tributary for Klamath Basin salmonids. NRC (2004) calls for restoring the Shasta River as a necessity in ensuring the salmon survival. The switch in the PDO looms. Speedy implementation is needed.

**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
E-54 Range and Riparian Land Management	<ul style="list-style-type: none"> <li>Parties Conducting Grazing Activities.</li> <li>Parties Responsible for Vegetation that Shades Water Bodies.</li> <li>Parties Responsible for Bank Stabilization Activities.</li> <li>Regional Water Board.</li> </ul>	<p>Landowners should employ land stewardship practices and activities that minimize, control, and, preferably, prevent discharges of fine sediment, nutrients and other oxygen consuming materials, as well as elevated solar radiation loads from affecting waters of the Shasta River and tributaries.</p> <p>Those that oversee and manage grazing and range land activities in the Shasta River watershed should implement grazing and rangeland management practices listed in Table 8.1 of the TMDL Implementation Plan, and in the Shasta Restoration Plan.</p> <p>The Shasta CRMP should, (1) implement the strategic actions specified in the Strategic Action Plan, and (2) assist landowners in developing and implementing management practices that are adequate and effective at preventing, minimizing, and controlling discharges of nutrients and other oxygen consuming wastes, and elevated water temperatures.</p> <p>The Regional Water Board will work cooperatively with the Shasta CRMP to provide technical support and information to willing individuals, landowners, and community members in the Shasta River watershed, coordinate educational and outreach efforts, and monitor the implementation and effectiveness of the Shasta Watershed Restoration Plan.</p>	Proposed action is sufficient.

**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
		<p>Should voluntary efforts fail to be implemented or effective at preventing, minimizing, and controlling discharges of sediment, nutrients and other dissolved oxygen consuming materials, and increasing solar radiation loads, the Regional Water Board's Executive Officer shall require the appropriate responsible parties to develop, submit, and implement a RRWMP on an as-needed, site-specific basis. Any landowner may be subject to this requirement if livestock grazing activities on their property are discharging, or threatening to discharge oxygen consuming materials and/or elevated solar radiation loads to a water body in the Shasta River watershed.</p> <p>The RRWMP shall describe in detail:</p> <p>Locations discharging and/or with the potential to discharge nutrients and other oxygen consuming materials, and increased solar radiation loads to watercourses which are caused by livestock grazing,</p> <p>How and when those sites are to be controlled and monitored, and management practices that will prevent and reduce, future discharges of nutrient and other oxygen consuming materials, and increases in solar radiation loads.</p> <p>Group and/or individual RRWMPs shall be implemented upon review, comment, and approval</p>	

**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
		<p>by Regional Water Board staff and their Executive Officer for compliance with Regional Board directives, the Basin Plan, and also with the management measures in the Nonpoint Source PCP.</p> <p>The Regional Water Board shall address the removal and suppression of vegetation that provides shade to a water body through its Wetland and Riparian Protection Policy, a comprehensive, region-wide riparian policy that will address the importance of shade on instream water temperatures and will potentially propose riparian setbacks and buffer widths. The Policy will likely propose new rules and regulations, and will therefore take the form of an amendment to the Basin Plan. Other actions under this section may be modified for consistency with this policy, once adopted. With funding already available through a grant from the U.S. EPA, Regional Water Board staff are scheduled to develop this Policy by the end of 2007.</p> <p>Permitting and Enforcement: The Regional Water Board shall take appropriate permitting and enforcement actions if necessary to address the removal and suppression of vegetation that provides shade to a water body in the Shasta River watershed. Such actions may include, but are not limited to, general waste discharge requirements (WDRs) or waivers of WDRs for grazing and rangeland activities, farming activities near water bodies, stream bank stabilization activities, and other</p>	



Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
		<p>land uses that may remove and/or suppress vegetation that provides shade to a water body. Should prohibitions or general WDRs be developed, they may apply to the entire North Coast Region or just to the Shasta River watershed.</p> <p>If necessary, Regional Water Board staff shall propose to the Board appropriate enforcement actions for human activities that result in the removal or suppression of vegetation that provides shade to a water body in the Shasta River watershed. Such actions may include, but are not limited to, cleanup and abatement orders, cease and desist orders, and administrative civil liabilities (fines) in accordance with California Water Code sections 13304, 13301, and 3350, respectively.</p> <p>Enforcement actions for violations of the California Water Code shall be taken when and where appropriate. Enforcement activities should be consistent with the State Water Board's <i>Water Quality Enforcement Policy</i> (SWRCB Resolution No. 2002-0040), adopted February 19, 2002, and as it may be amended from time to time. This enforcement policy promotes a fair, firm, and consistent enforcement approach appropriate to the nature and severity of a violation.</p> <p>Within two years of the date that the TMDL Action Plan takes effect the Regional Water Board's Executive Officer shall report to the Board on the</p>	

**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

<b>Source or Land Use Activity</b>	<b>Responsible Parties</b>	<b>Action Proposed in Public Draft TMDL</b>	<b>Recommended Alternative Action</b>
		status of the preparation and development of appropriate permitting actions. Enforcement implementation is ongoing and effective the date that the TMDL Action Plan is adopted.	
Tailwater Return Flows	<ul style="list-style-type: none"> <li>Parties Responsible for Tailwater Management and Use</li> <li>Shasta CRMP</li> <li>Shasta RCD</li> <li>CDFG</li> <li>Regional Water Board</li> </ul>	<p>Parties responsible for tailwater discharges from irrigated lands, which may include landowners, lessees, and land managers, should implement the management practices presented in the CDF&amp;G's Coho Recovery Strategy, the Shasta CRMP's Shasta Watershed Restoration Plan and the Shasta RCD's Incidental Take Permit Application.</p> <p>Regional Water Board staff will evaluate the effectiveness of these voluntary actions and develop</p>	Proposed action is sufficient.

**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
		<p>recommendations for the most effective regulatory vehicle to bring tailwater discharges into compliance with the TMDL and the Basin Plan. Information gathered during the evaluation phase will be used to formulate final recommendation(s) to the Regional Water Board. This evaluation phase shall be completed within 12 months after the TMDL is approved by the U.S. EPA.</p> <p>Based on Regional Water Board staff recommendation(s) derived from the evaluation phase for tailwater management, the Regional Water Board shall adopt prohibitions, Waste Discharge Requirements, Waivers of Waste Discharge Requirements, or any combination, thereof, as appropriate.</p> <p>To assure compliance if prohibitions, WDRs, Waivers of WDRs, or any combination of the latter are adopted, a tiered tailwater management program may be instituted for tailwater management that may include various elements such as discharge and receiving water sampling, monitoring, and reassessment.</p> <p>Additional management practices to assure that tailwater discharges to receiving waters comply with the TMDL and the Basin Plan may also be based on results from the tailwater management program.</p>	

Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
Water Use and Flow	<ul style="list-style-type: none"> <li>Water Rights Holders and other Stakeholders</li> <li>Shasta Coordinated Resource Management and Planning Committee (Shasta CRMP)</li> <li>Shasta Valley Resource Conservation District (Shasta RCD)</li> <li>California Department of Fish and Game (CDFG)</li> <li>Regional Water Board</li> </ul>	<p>Water diverters should participate in the CDFG's Coho Recovery Strategy (CDFG 2004a) and Incidental Take Permit Program (CDFG 2004b). The Regional Board shall work with DFG to establish monitoring and reporting elements of these programs in order to gage their effectiveness.</p> <p>Water diverters should participate in and implement flow-related measures outlined in the Shasta CRMP's Shasta Watershed Restoration Plan. The Regional Board shall work with the Shasta CRMP to establish monitoring and reporting elements in order to gage the Plan's implementation and effectiveness.</p> <p>If after five years, the Regional Board Executive Officer finds that the above-measures have failed to be implemented or are otherwise ineffective, the Regional Board may recommend that the SWRCB consider seeking modifications to the decree, conducting proceedings under the public trust doctrine, and/or conducting proceedings under the waste and unreasonable use provisions of the California Constitution and the California Water Code.</p>	<p>Water diverters should participate in the CDFG's Coho Recovery Strategy (CDFG 2004a) and Incidental Take Permit Program (CDFG 2004b). The Regional Board shall work with DFG to establish monitoring and reporting elements of these programs in order to gage their effectiveness.</p> <p>Water diverters should participate in and implement flow-related measures outlined in the Shasta CRMP's Shasta Watershed Restoration Plan. The Regional Board shall work with the Shasta CRMP to establish monitoring and reporting elements in order to gage the Plan's implementation and effectiveness.</p> <p><b>The Regional Water Board shall actively encourage the purchase of water rights for the purpose of maintaining adequate streamflows.</b></p> <p><b>Recommend revisiting adjudication to stop riparian appropriation of water purchased for instream flows and fish.</b></p> <p>If after <b>two</b> years, the Regional Board Executive Officer finds that the above-measures have failed to be implemented or are otherwise ineffective, the Regional Board will recommend that the SWRCB consider seeking modifications to the decree, conducting proceedings under the public trust doctrine, and/or conducting proceedings under the waste and unreasonable use provisions of the California Constitution and the California Water</p>

**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
			Code.
Irrigation Control Structures, Weirs, Flashboard Dams, and other Minor Impoundments (Collectively referred to as minor impoundments)	<ul style="list-style-type: none"> <li>• Individual Irrigators</li> <li>• Irrigation districts</li> <li>• Other Stakeholders owning, operating, managing, or anticipating construction of minor impoundments</li> </ul>	<p>Irrigations districts, individual irrigators, and other stakeholders that own, operate, manage, or anticipate construction of instream impoundments such as flashboard dams, or other structures capable of blocking, impounding, or otherwise impeding the free flow of water in the Shasta River system shall comply with the following measure:</p> <p>Within one year of TMDL approval by the U.S. EPA, report to the Regional Water Board methods and management practices they shall implement that will reduce sediment oxygen demand rates by 50% from baseline behind all minor impoundments.</p> <p>Options may include, but are not limited to: 1) permanently removing impoundments in the Shasta River mainstem as a mechanism to provide for flushing flows capable of scouring fine sediment from the stream-river channel on which aquatic plants grow; 2) re-engineering existing impoundments to decrease their surface area; and 3) not undertaking the construction of new impoundments unless they can be shown to have positive effects to the beneficial uses of water relative to water quality compliance and the support of beneficial uses, including the salmonid fishery, in the Shasta Valley.</p>	Proposed action is sufficient.

Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
Lake Shastina	<ul style="list-style-type: none"> <li>Montague Water Conservation District (NWCD)</li> <li>Other Appropriate Stakeholders</li> <li>Regional Water Board</li> </ul>	<p>The Montague Water Conservation District shall take the following actions: Initiate within two years, complete and submit to the Regional Water Board within five years, the results of an investigation characterizing, quantifying, and analyzing the sources of, and ways to reduce, nitrogenous oxygen demanding substances contributing to low dissolved oxygen levels affecting the beneficial uses of water in Lake Shastina and to waters of the Shasta River downstream from Dwinnell Dam.</p> <p>Based on the results of the investigation, the Regional Water Board shall determine appropriate implementation actions necessary to reduce the nitrogenous oxygen demand that is lowering dissolved oxygen concentrations in Lake Shastina and affected areas downstream from Dwinnell Dam.</p>	<p>The Montague Water Conservation District shall take the following actions: Initiate within two years, complete and submit to the Regional Water Board within five years, the results of an investigation characterizing, quantifying, and analyzing the sources of, and ways to reduce, <b>nutrients and</b> nitrogenous oxygen demanding substances contributing to low dissolved oxygen levels affecting the beneficial uses of water in Lake Shastina and to waters of the Shasta River downstream from Dwinnell Dam.</p> <p>Based on the results of the investigation, the Regional Water Board shall determine appropriate implementation actions necessary to reduce the <b>nutrients and</b> nitrogenous oxygen demand that is lowering dissolved oxygen concentrations in Lake Shastina and affected areas downstream from Dwinnell Dam.</p> <p><b>The Regional Water Board shall study the possibility of using pulse flows from Lake Shastina to clean out accumulated organic matter and macrophytes from the Shasta River.</b></p>
City of Yreka Wastewater Treatment Facility (Yreka WWTF)	<ul style="list-style-type: none"> <li>City of Yreka</li> <li>Regional Water Board</li> </ul>	The Regional Water Board staff shall pursue aggressive compliance with Order No 96-69, and CAO No.R1-2004-0037. To ensure timely submittal of sampling and analytical results from the operators of the Yreka WWTF, the Regional Water Board staff shall also continue vigorous oversight and enforcement of Monitoring and Reporting Program	Proposed action is sufficient.

Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
		No. R1-2003-0047.	
Urban and Suburban Runoff	<ul style="list-style-type: none"> <li>• Cities of Yreka, Weed, the Lake Shastina Development</li> <li>• Other Stakeholders</li> <li>• Regional Water Board</li> </ul>	<p>The cities of Yreka, Weed, the Lake Shastina Development and other stakeholders should identify possible pollutants, their sources, and volumes of polluted runoff from urban and suburban sources within their spheres of influence that may discharge, directly or indirectly, to waters of the Shasta Valley watershed.</p> <p>Cities and other stakeholders responsible for urban and suburban runoff should implement the following measures:</p> <p>Seasonal scheduling of construction activities to prevent unnecessary waste loads in stormwater runoff.</p> <p>Seasonal scheduling for the application to lawns and gardens, municipal facilities, and agricultural areas of fertilizers, pesticides and herbicides, and other oxygen consuming materials that may contribute to dissolved oxygen impairments to watercourses in the Shasta River hydrologic system from cities, towns, developments and other concentrations of urban and suburban populations.</p> <p>When, and if, pollutant sources are identified that discharge, or threaten to discharge, oxygen consuming materials, fine sediment, and other</p>	<p>The cities of Yreka, Weed, the Lake Shastina Development and other stakeholders should identify possible pollutants, their sources, and volumes of polluted runoff from urban and suburban sources within their spheres of influence that may discharge, directly or indirectly, to waters of the Shasta Valley watershed.</p> <p>Cities and other stakeholders responsible for urban and suburban runoff should implement the following measures:</p> <p>Seasonal scheduling of construction activities to prevent unnecessary waste loads in stormwater runoff.</p> <p>Seasonal scheduling for the application to lawns and gardens, municipal facilities, and agricultural areas of fertilizers, pesticides and herbicides, and other oxygen consuming materials that may contribute to dissolved oxygen impairments to watercourses in the Shasta River hydrologic system from cities, towns, developments and other concentrations of urban and suburban populations.</p> <p><b>New developments should be designed to minimize stormwater runoff and maximum infiltration by minimizing impervious surface</b></p>

**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
		polluting constituents to nearby watercourses from existing runoff control facilities, the Regional Water Board will work cooperatively with responsible parties to ascribe appropriate management measures and reasonable time schedules to control and eliminate said pollutant discharges.	<p><b>area, minimizing hydrologic connection between impervious surfaces and watercourses, and constructing stormwater retention basins. Existing developments should be retrofitted to minimize stormwater runoff.</b></p> <p>When, and if, pollutant sources are identified that discharge, or threaten to discharge, <b>nutrients</b>, oxygen consuming materials, fine sediment, and other polluting constituents to nearby watercourses from existing runoff control facilities, the Regional Water Board will work cooperatively with responsible parties to ascribe appropriate management measures and reasonable time schedules to control and eliminate said pollutant discharges.</p>



**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
Activities on Federal Lands	<ul style="list-style-type: none"> <li>• U.S. Forest Service (USFS)</li> <li>• Regional Water Board</li> </ul>	<p>The USFS shall consistently implement the best management practices included in <i>Riparian Area Management 1997</i> (USDA/USDI 1997), and <i>Water Quality Management for Forest System Lands in California, Best Management Practices</i> (USFS 2000).</p> <p>The Regional Water Board staff will continue its involvement with the USFS to periodically reassess the mutually agreed upon goals of the Management Agency Agreement between the SWRCB and the USFS.</p> <p>Additionally, the Regional Water Board shall work with the USFS to draft and finalize a Memorandum of Understanding (MOU). The MOU shall be drafted and ready for consideration by the appropriate decision-making body of the USFS within two years of the date the TMDL Action Plan takes effect. The MOU shall include buffer width requirements and other management practices as detailed in the Implementation chapter of the TMDL.</p>	Proposed action is sufficient.

**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

<b>Source or Land Use Activity</b>	<b>Responsible Parties</b>	<b>Action Proposed in Public Draft TMDL</b>	<b>Recommended Alternative Action</b>
	<ul style="list-style-type: none"> <li>• U.S. Bureau of Land Management</li> <li>• Regional Water Board</li> </ul>	<p>BLM shall implement best management grazing strategies that are detailed in a joint management agency document titled: <i>Riparian Area Management 1997</i> (USDA/USDI 1997).</p> <p>The Regional Water Board shall work with the BLM to draft and finalize a Memorandum of Understanding (MOU). The MOU shall be drafted and ready for consideration by the appropriate decision-making body of the BLM within two years of the date the Shasta River TMDL Action Plan takes effect. The MOU shall include buffer width requirements and other management practices as detailed in the Implementation chapter of the TMDL.</p>	Proposed action is sufficient.
<b>Timber Harvest Activities on Non-federal Lands</b>	<ul style="list-style-type: none"> <li>• California Department of Forestry (CDF)</li> <li>• Regional Water Board</li> </ul>	[discussed in chapter 8 but not in Basin Plan amendment language]	<p><b>The Regional Water Board shall rely on applicable current regulations, existing permitting and enforcement tools, and other ongoing staff involvement, summarized in the listed below, associated with timber harvest activities. As such, no new regulations or actions are being proposed in association with this TMDL:</b></p> <ul style="list-style-type: none"> <li>- Z'Berg-Nejedly Forest Practice Act and the California Environmental Quality Act (CEQA)</li> <li>-Management Agency Agreement between the CDF and the State Water Resources Control Board to oversee water quality protection on timber operations on non-federal lands in California.</li> <li>- Senate Bill 810, enacted in 2003, provides that a</li> </ul>

**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

Source or Land Use Activity	Responsible Parties	Action Proposed in Public Draft TMDL	Recommended Alternative Action
			<p><b>Timber Harvest Plan (THP) may not be approved if the Regional Water Board finds that the proposed timber operations will result in discharges to a water body impaired by sediment and/or is in violation of the Basin Plan.</b></p> <ul style="list-style-type: none"> <li>- <b>Regional Water Board Timber Harvest General Waste Discharge Requirements (Order No. R1-2004-0030) and Categorical Waiver of Report of Waste Discharge (Order No. R1- 2004-106) for timber activities on private lands. Both the Categorical Waiver and the General Waste Discharge Requirements programs use the CDF timber harvest, functional equivalent review process for THPs and Non-industrial Timber Management Plans (NTMP) to ensure compliance with the CEQA.</b></li> <li>- <b>Active and continuous oversight by Regional Water Board staff of the timber harvest review and inspection process.</b></li> <li>- <b>Habitat Conservation Plans and Sustained Yield Plan review.</b></li> <li>- <b>U.S. Forest Service activities (discussed in Section 8.1.17) and CDF and Board of Forestry meetings and review.</b></li> </ul>
Caltrans Activities	<ul style="list-style-type: none"> <li>• California Department of Transportation (Caltrans)</li> <li>• Regional Water Board.</li> </ul>	Regional Water Board staff shall complete an initial evaluation of the Caltrans Stormwater Program within two years of the date the TMDL Action Plan takes effect. After the initial two-year evaluation is completed, the Regional Water Board staff shall continue periodic reviews of the Caltrans Storm Water Program to assure ongoing compliance with	Proposed action is sufficient.

**Table 1. Proposed TMDL Implementation Actions and Recommended Alternative Actions**

<b>Source or Land Use Activity</b>	<b>Responsible Parties</b>	<b>Action Proposed in Public Draft TMDL</b>	<b>Recommended Alternative Action</b>
		the Shasta River TMDL.	

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## Appendix A:

### Typographic/grammar errors and other less significant comments

#### General comment

Many of the tables and charts in this document are formatted as images, not text/lines. This makes them harder to read (fuzzy and pixilated) and makes it impossible to copy/paste data from tables into spreadsheets. If possible, the Regional Water Board should try in future TMDLs to properly format the tables and charts.

#### Page 2-25

This statement is based on a total of 6 data points: “Total phosphorus levels are low in the headwaters of the watershed at the North North Fork Shasta River and Shasta River near the headwaters monitoring locations, with values of 0.025 mg/L”

Hence, a qualifying statement is necessary (also note that the word North is repeated). We suggest the following: “Existing limited data (6 samples) indicate that total phosphorus levels are low in the headwaters of the watershed at the North Fork Shasta River and Shasta River near the headwaters monitoring locations, with values of 0.025 mg/L”

#### Page 2-28

This statement is based on a total of 6 data points: “Total phosphorus concentrations of the headwaters of the Shasta River are generally oligotrophic, with TP concentrations at levels that do not promote nuisance aquatic growth.”

Hence, a qualifying statement is necessary. We suggest the following: “Existing limited data (6 samples) indicate that total phosphorus concentrations of the headwaters of the Shasta River are generally oligotrophic, with TP concentrations at levels that do not promote nuisance aquatic growth.”

#### Page 2-29

This statement is based on a total of 6 data points: “Existing limited data (6 samples) indicate that” to the beginning of “The headwaters of the Shasta River generally have low total nitrogen levels, indicative of conditions that do not promote aquatic plant growth.”

Hence, a qualifying statement is necessary. We suggest the following: “Existing limited data (6 samples) indicate that the headwaters of the Shasta River generally have low total nitrogen levels, indicative of conditions that do not promote aquatic plant growth.”

#### Page 3-9

In Figure 3.5, the Y-scale on graph is too large. It would be more legible if scale was from +1 to -4, rather than current scale of +4 to -4. If this would be easy to do, it should be redone.

#### Page 3-16

There is a bunch of irrelevant words on this page (delete).



Page 4-2

The statement that “The organic matter thus produced then serves as an energy source for bacteria and animals in the reverse process of *respiration*...” should be revised to include the fact that plants also respire (could be fixed by adding “plants, ” before “bacteria”).

Page 4-5

The statement “At this average TKN concentration, approximately 2.3 mg/L of oxygen is consumed, representing a moderate component of the total oxygen demand exerted in the Shasta River.” should be revised to read “At this average TKN concentration, approximately 2.3 mg/L of oxygen would be consumed. This 2.3 mg/L of oxygen consumption occurs spread over an unknown period that is likely at least five days long, thus representing only a moderate component of the total oxygen demand exerted in the Shasta River.”

Page 4-6

This statement on page 4-6 is ambiguous as to whether the conditions occurred in the Shasta River or elsewhere: “USGS reports document cases of supersaturated conditions attributed to aquatic plant growth persisting for several days or more, with saturations as high as 250 percent (Flint et al. 2005, p. 60).” We recommend changing it to: “USGS reports from Oregon document cases of supersaturated conditions attributed to aquatic plant growth persisting for several days or more, with saturations as high as 250 percent (Flint et al. 2005, p. 60).”

Page 8-7

On this page there are several mentions of the Scott River that should instead be the Shasta River. It appears as though this language was ported over from the Scott TMDL. Also, there is mention of the “Strategic Action Plan”, another relic from the Scott River TMDL.

Page 8-8

Change “timewith” to “time with”

Page 8-9

“Grazing on federal land is addressed separately in sections 8.8 (Forest Service) and 8.9 (BLM) of the Staff Report.” This apparently references an outdated numbering system; it should be sections 8.9 and 8.10.

Page 8-11

This language is contained twice in the same paragraph. One should be deleted.

“Irrigation water would be applied uniformly based on an accurate measurement of cropwater needs and the volume of irrigation water applied, considering limitations raised by such issues as water rights, pollutant concentrations, water delivery restrictions, salt control, wetland, water supply and frost/freeze temperature management. Additional precautions would apply when chemicals are applied through irrigation.”

Page 8-13

This statement is out of place, and it is unclear what the point is:

“The Dissolved Oxygen TMDL (Chapter 7), using the water quality compliance scenario of the RMS model, shows that photosynthetic and respiration rates approaches 50% of existing baseline conditions when assuming a 50% reduction in the standing crop of aquatic plants.”

This does not make any sense. The photosynthetic/respiration rates are essentially the same things (just different units) as the standing crop.

Page 8-18

Change “dry wet water plan” to “dry year water plan”

Change “dissolver” to “dissolved”

Page 8-34

Change "Contol" to "Control"

Change "Dsicharge" to "Discharge"

Change "nd" to "nd"



# YUROK TRIBE

190 Klamath Boulevard • Post Office Box 1027 • Klamath, CA 95548

December 19, 2006

Bob Williams  
Staff Environmental Scientists  
Conservation Planning  
California Department of Fish and Game  
601 Locust Street  
Redding, CA 96001

Re. Scoping comments for the California Department of Fish and Game (CDFG) Draft Environmental Report for the proposed Shasta and Scott River Watershed-Wide Permitting Program

Dear Mr. Williams:

This letter contains the technical comments of the Yurok Tribal Fisheries Program regarding the watershed-wide permitting programs for both the Scott and Shasta Rivers. I would like to thank you for the opportunity to submit these comments beyond the original due date. Our staff has been stretched thin during recent months dealing with a multitude of ongoing important issues related to the health of the Yurok Tribe's fisheries resource.

The Yurok reservation is located along the lower 44 miles of the Klamath River. The fisheries resource of the Klamath Basin is integral to the Yurok way of live; for subsistence, ceremonial, and commercial purposes. The Yurok Tribe is the largest harvester of Klamath Basin fish populations, dependent upon all fish stocks that migrate through the reservation, including coho salmon and other species that are destined for the Scott and Shasta Rivers. These scoping comments are intended to assist the State with development of the watershed-wide permitting programs in a manner that fully protects, conserves and restores fish populations of the Scott and Shasta Rivers; basins that have the potential to once again be primary producers of fish for the sustenance of Yurok People.

It should be noted that it is a challenge to draft meaningful scoping comments regarding a DEIR that will cover an Incidental Take Permit (ITP) and Master Streambed Alteration Agreement (MSAA) when neither of these documents are yet available for review. We look forward to consulting with CDFG regarding these documents when they become available for our review. The comments listed below are in regard to the *Environmental*

*Checklist/Initial Study* that has been distributed for both the Scott and Shasta Rivers permitting programs.

#### *Scope of Analysis*

From the Environmental Checklist/ Initial Study it appears that the ITP is intended to apply to all agricultural activities undertaken by those who sign up and not just stream diversions and restoration projects. If this is the case the EIR must analyze and consider the entire scope of the agricultural activities to be covered, including the cumulative impact of all agricultural activities in each sub-basin currently occurring as well as anticipated activities. The full range of agricultural activities and impacts includes but is not limited to groundwater pumping, length of irrigation season, cropping patterns and systems, grazing systems, summer pasturage and stocking per acre, nutrient production and cycling, nutrient export/delivery to streams. If the word agricultural is defined to include silvicultural activities, then that needs to be clearly stated. If, as appears from the initial study, the analysis only addresses stream diversion and restoration activities, then the ITP must be similarly limited in scope and should not be applied to entire agricultural operations.

#### *Baseline*

A primary concern we have with the DEIR is that the baseline being proposed is narrowly defined as existing conditions at the time the ITP application was submitted (spring of 2005); the conditions that led to the listing of coho salmon under the California Endangered Species Act (CESA). This baseline fails to consider the past activities that have led to the degradation of coho habitat, such as the construction of Dwinell Dam in the Shasta River, the over-diversion of stream flow in both basins, the over-pumping of ground water that is hydrologically connected to surface flow, and stream channelization that has occurred to protect farm land. Per the requirements of CEQA, we request that the DEIR conduct a cumulative environmental impacts analysis, and that an assessment be made regarding the impacts to coho salmon from ongoing land and water management activities of these basins.

The environmental baseline for in-stream flows for fish should be the flows ordered in the adjudication at the gauging station. It is assumed that these flows were based on CDFG and USFS input. In fact, additional flows were requested but not granted in the adjudication.

#### *Instream Flow*

We are fully supportive of activities that will improve flows in the Scott and Shasta Rivers, as low flow is a primary factor limiting fish production from these basins. However, the success of actions intended to increase instream flow is dependent upon several factors; the “devils in the details” so to speak. Therefore, we recommend that the following assessments be conducted while developing the DEIR.

- Given that the Scott and Shasta Rivers are over-allocated, there should be an assessment of the ability to address increase of flow in an over-allocated system. For example, if California Water Code 1707 or some other mechanism is used to dedicate water rights for instream purposes, what is the likelihood that this water

will actually be used for these purposes over the long-term, rather than simply used by another diverter downstream? This analysis should include an assessment of likelihood that legal and/or illegal diversions will divert or pump out of the river the water dedicated for instream purposes.

- An assessment is also needed regarding the likelihood that the abandonment of surface water diversions will not be simply converted to groundwater pumping; pumping of groundwater that is hydrologically connected to surface water. This is especially important given that groundwater pumping is not proposed to be covered under the ITP. The NCWQCB has determined in the case of the Scott that the extent of connection between ground and surface water is not accurately known. Therefore, the extent of impact of conversion from surface to groundwater irrigation is also unknown. In this circumstance, the precautionary principle suggests that the USGS and DWR finding that surface and groundwater are “broadly interconnected” should be the basis of analysis.
- A process needs to be identified that will determine measurable benefits to stream flow above the current base-line. The CEQA process should be used to assess various alternatives for evaluating stream flow benefits from various activities. This analysis should include assessment of increases in cold water flows.
- If piping of irrigation ditches is to be used as a water conservation measure, then an assessment should be conducted regarding the “net” water right vs. the “point of diversion” water right, and the resultant benefit to streamflow from the piping. There should be an assessment to determine whether piping of water in some locations may actually result in less stream flow, because of increased “net” diversion and a decrease of water leaking from ditches and returning to the stream.
- If ground water pumping is exchanged for surface water diversions, what effect will this have on the duration of the irrigation season? Could the irrigation season be extended, thereby delaying the time the stream would be re-watered in the fall? How will this be assessed prior to implementation? Since groundwater is not regulated, how will someone be prevented from pumping more or longer?
- A hydrologic assessment should be conducted regarding the relationship between ground water pumping and surface flows. All groundwater pumping measures should be guided by the results of such an assessment.
- Diversion ditches can be high maintenance, to the point that they are occasionally abandoned. Abandonment can be caused by stream channel migration or simply result from an extended period of poor maintenance. It is natural for diversion ditches to occasionally be abandoned, which is envisioned in state water law; water rights are not forever, but only for as long as they can be used. An assessment should be made in the CEQA process to determine whether piping of some ditches may affect the abandonment of ditches, thereby resulting in long-term increased water diversions. Will there be a process implemented to prevent this from occurring?
- Determinations regarding the appropriate time of year for a stream to lose connectivity should be based upon sound biology and hydrology. An assessment should be made to assess the scientific basis of any such determinations. Where

available, historical information concerning when certain streams naturally dewatered should be used and cited.

- An assessment needs to be conducted regarding whether the ITP will address non-adjudicated water rights, such as riparian and appropriative water rights.

#### *Specificity of Language*

An assessment should be conducted of the ITP and MSAA regarding the specificity of language included in the permits. For example, if there is language in regard to the dedication of water to instream flow, such language should be stated as “no less than” rather than “up to” (Scott River Initial Study, section 8.4.1 Flow Enhancement Mitigation 3).

#### *Instream Structures*

The CEQP process should include an assessment regarding the extent that instream structures and large-scale rip rap will be covered by the ITP. Will activities be distinguished regarding habitat restoration vs. protection of fields?

#### *Prioritization of Streams for Restoration*

The CEQA process should include an analysis of how streams or stream segments will be prioritized for restoration efforts. How will essential life stages be considered spatially and temporally in such a prioritization process?

#### *Installation of Fencing and Riparian Restoration and Revegetation*

If riparian planting or fencing are implemented as avoidance, minimization, or mitigation measures, the CEQA process should conduct an analysis regarding the width and resultant effectiveness of the areas to be planted or fenced. This analysis should identify the most important metric for assessing success. For example the length of stream to be restored should be given priority over the acres of trees planted and/or fenced? An analysis of effectiveness monitoring plans should also be conducted – for example, the metric for success should be based upon the densities of trees that survive, not simply the density of trees planted.

In-stream and riparian restoration projects should be required to be consistent with moving the stream toward “properly functioning condition” as defined on a site specific basis by DFG biologists.

#### *Water Diversion Structures*

If the ITP or MSAA are to cover activities such as ongoing maintenance of existing flashboard dams, gravel push-up dams and other temporary structures, the CEQA process should conduct an analysis regarding the relationship between these structures and Fish and Game Codes 5901 (states it is unlawful to not allow for fish passage) and 5937 (states that it is mandatory to allow enough water to remain in a stream to keep fish in good condition). The assessment should determine whether these structures would violate these codes. In cases where there is a violation, the environmental impacts should be assessed for providing remedies to the violation. Specifically, there should be an

analysis of the Dwinell dam and the benefits of providing fish passage to Coho as required by California law or the benefits to Coho from dam removal.

#### *Stock Water Systems*

The Initial Study for the Scott River states that an average of two alternative stock watering systems will be installed per year. The Shasta River Initial Study states that two alternative stock watering systems will be installed per year if this is determined to be beneficial for coho salmon. The CEQA process should conduct an analysis to assess this rate of implementation relative to the goal of providing adequate flow for coho salmon as soon as possible.

#### *Compliance Monitoring*

According to the Initial Study, the RCD's within each basin will be responsible for monitoring the sub-permittees' compliance with the terms and conditions of their sub-permits by instituting a comprehensive compliance monitoring program. The CEQA process should conduct a thorough assessment of the accountability of such a program. Will CDFG conduct audits to ensure that the compliance monitoring program is meeting its intended purpose?

#### *Adaptive Management*

We support the effectiveness monitoring results being used as the basis for an adaptive management type program, to refine future avoidance, minimization, and mitigation measures. The CEQA process should conduct an analysis of how such an adaptive management program will be implemented. How will such a Program be encouraged? What will be the structure of such a Program? Who will be participants in such a process? Will the Basin's Tribes be allowed participation in such a Program?

#### *Access to Property*

The Initial Study states the sub-permittees shall allow "non-enforcement CDFG representatives written consent to access the sub-permittee's property for the purpose of verifying compliance with, or the effectiveness of, required avoidance, minimization, and mitigation measures and/or for the purpose of fish population monitoring, provided CDFG notifies the sub-permittee at least 48 hours in advance." The CEQA process should assess the pros and cons from allowing such access to CDFG law-enforcement personnel as well, especially given their expertise in enforcing regulatory measure.

The CEQA process should also assess whether CDFG has the authority to cede a right to private landowners. There should be a thorough analysis of all non-waiver enforcement provisions including aerial surveillance and the lost environmental benefits of access and enforcement allowed before the waiver. Since the State Lands Commission and the Siskiyou County Council have declared that the Scott River is navigable, the CDFG may already have the right of access. This should be assessed in the EIR.

#### *Water Master Reporting*

The Initial Study states that DWR will report the results of water use information to CDFG on a monthly basis from April to November of each year. The CEQA process should assess how often DWR will be visiting each point of diversion to ensure compliance with the law, as well as assess whether the information DWR reports to CDFG be- available to the public?

*Summary*

In summary, many of the activities discussed in the Initial Studies have the potential to dramatically improve conditions in the Scott and Shasta Rivers for coho salmon as well as the overall aquatic health of these ecosystems. As mentioned earlier, the success of these activities is dependent upon the details associated with their implementation. Therefore, we request thorough analysis be conducted throughout the environmental review process to ensure that implementation is effective in achieving desired results. In the end, the effectiveness of these permitting Programs should be based on results, both in regard to specific projects as well as the overall Program resulting in increased populations of coho salmon. If you would like to discuss these comments, please don't hesitate to contact me at the address in the letterhead. We look forward to meeting with CDFG staff to discuss the ITP once it becomes available for our review.

Sincerely,

Dave Hillemeier  
Yurok Fisheries Program Manager



## NATIVE AMERICAN HERITAGE COMMISSION

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October 25, 2006

Mr. Bob Williams

**California Department of Fish & Game****Region 1**

601 Locust Street  
Redding, CA 96001

Re: SCH# 2006102093; CEQA Notice of Preparation (NOP) of an Initial Study for the Shasta River Watershed-Wide (Including Tributaries) Permitting Program; Siskiyou County

Dear Mr. Williams:

Thank you for the opportunity to comment on the above-referenced document. The California Environmental Quality Act (CEQA) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR per CEQA guidelines § 15064.5(b)(c)). In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE),' and if so, to mitigate that effect. To adequately assess the project-related impacts on historical resources, the Commission recommends the following action:

✓ Contact the appropriate California Historic Resources Information Center (CHRIS). The record search will determine:

- If a part or the entire (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded in or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

- The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.

- The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological information center.

✓ Contact the Native American Heritage Commission (NAHC) for:

- \* A Sacred Lands File (SLF) search of the project area and information on tribal contacts in the project vicinity who may have information on cultural resources in or near the APE. Please provide us site identification as follows: USGS 7.5-minute quadrangle citation with name, township, range and section. This will assist us with the SLF.

- Also, we recommend that you contact the Native American contacts on the attached list to get their input on the effect of potential project (e.g. APE) impact.

✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.

- Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.

- Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.

✓ Lead agencies should include provisions for discovery of Native American human remains or unmarked cemeteries in their mitigation plans.

**NATIVE AMERICAN HERITAGE COMMISSION**

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[ds\\_nahc@pacbell.net](mailto:ds_nahc@pacbell.net)



\* CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this

Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens.

✓ Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the CEQA Guidelines mandate procedures to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

✓ Lead agencies should consider avoidance, as defined in § 15370 of the CEQA Guidelines, when significant cultural resources are discovered during the course of project planning.

Please feel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,

Dave Singleton  
Program Analyst

Cc: State Clearinghouse  
Attachment: List of Native American Contacts





# COUNTY OF SISKIYOU

## COUNTY ADMINISTRATIVE OFFICE

Barry Shioshita, County Administrator  
P.O. Box 750 • 201 Fourth Street, Yreka, CA 96097  
Phone: (530) 842-8005, Fax Number: (530) 842-8013  
[www.co.siskiyou.ca.us](http://www.co.siskiyou.ca.us)

November 20, 2006

Mr. Bob Williams  
Staff Environmental Scientist  
Conservation Planning (CDFG)  
601 Locust Street  
Redding, CA 96001

RE: CEQA COMMENT ON THE SHASTA RIVER/SCOTT RIVER WATERSHED PROJECT  
"INCIDENTAL TAKE PERMIT"

Dear Mr. Williams:

Siskiyou County has long taken a proactive approach to dealing with environmental issues that impact the constituency in our county, and as such, appreciates the opportunity to comment on this "groundbreaking approach to permitting" that can benefit public trust resources, landowners and water users in a synergistic way. This project is the result of the development of a Recovery Strategy for Coho Salmon and the Pilot Program on the Scott and Shasta River valleys for agricultural operations. We have the following comments:

1. It is critical that a very clear and complete description of the "programmatic" or "watershed-wide" nature of this CEQA process be included in the appropriate documents. The ESA Team stated in its workshop sessions that "types of measures" would be evaluated under CEQA, not specific measures or the specifics of measures. We think the manner and method of tiering this EIR to any needed EIRs for specific actions/projects that would be implemented as part of the avoidance, minimization, and mitigation measure process should be specifically stated, described, and analyzed. We feel that some type of Program EIR, Project EIR, Master EIR, or some other CEQA document may be necessary as a template for review and analysis of this "project." It is our understanding that one of the incentive benefits for prospective applicants is that the requirement for an individual CEQA review would be eliminated. Is there a possibility that a sub-permittee would have to do additional CEQA analysis and review under the program as currently outlined?

We understand that the State and Regional Water Boards may have a template for CEQA analysis and review on a state-wide and region-wide basis regarding waste discharge requirements. Communication with them may have benefits to this CEQA review.

The ESA Team also stated that it would be impossible to quantify the take or the benefits to fish from the measures in the permit. The potential success of this project hinges on the ability of people to actually see that the take of anadromous fish is avoided, minimized, or fully mitigated, and that the 1600 requirements will indeed protect the riverine environment. Therefore, it is critical to fully communicate a complete description of the permitting program and the "project" to be reviewed under CEQA.

2. There is a tremendous advantage for the Department of Fish and Game, public trust resources of the valleys, and the citizens/water users/farmers and ranchers to participate in a watershed-wide, streamlined permitting system. This proposed permitting program institutes actions where those actions are not just tied to an individual applicant's property (as under a standard individual permit), but are focused and prioritized in the watershed where the benefit to the public trust resources, sub-permittees, and permit holders alike is maximized. This unique program will allow prospective applicants an incentive as well as a choice to apply through the "Watershed-wide Permitting Program." This is another reason why it is important to clearly describe and distinguish the "program" from the "project". It is important that the larger benefit from a watershed-wide approach be communicated and analyzed in the CEQA process.

In order to realize these benefits, potential sub-permittees must see an advantage to working together for the benefit of other sub-permittees under the watershed-wide approach. Any financial burden in terms of potential costs and fees must be spread to all individuals participating considering the factors of equitability and proportionality. This burden needs to be less than the cost of applying for an individual permit. Under the watershed-wide approach, there must be equity and fairness across all resource users. The permit provisions and language must allow the RCDs, as permit holders, to implement the program in the best manner possible. Such permitting language should allow the RCDs the flexibility to organize and administer the permitting process in order to attract as many sub-permittees as possible. The RCDs must look at an appropriate fee structure, and may also need to specify measures that enable fair and equitable treatment, such as a mitigation banking program.


3. We suggest that this CEQA process prevent and clear up any existing confusion between the Recovery Strategy that is now being voluntarily implemented, and any stipulated permit measures that are currently designated as recovery tasks but which will become requirements under the Watershed-wide Permitting Program.



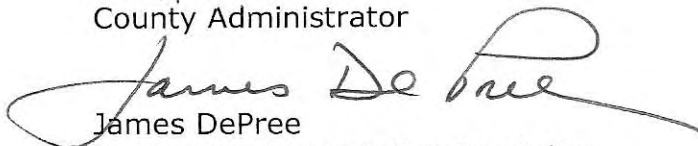
4. This permitting program must be economically sound. The opportunity to achieve strong resource management, a viable permitting program, and a user-friendly approach will pay dividends as open space in these river valleys continues to serve the needs of both citizens and public trust resources.
5. The manner and method that this project and program can interface with TMDL Action Plans and federal recovery plans should be discussed in the CEQA analysis. It makes sense that the two components, i.e., TMDL Action Plans and the federal recovery strategies should mesh, and this interactive approach will eliminate unnecessary and costly redundancy or conflict in achieving the objectives of both programs.
6. We encourage program paperwork simplification to the extent practical. Let's keep the process as simple as possible, and make it viable and attractive to potential applicants.
7. We encourage an evaluation of the use of hatcheries as replacement of habitat where that would be appropriate.

We think that the alternative of having permit applicants get an individual permit and be responsible for avoidance, minimization, and mitigation measures on that property is not as beneficial to resources and citizens as is the watershed-wide permitting approach currently being analyzed.

Sincerely,



Barry Shioshita  
County Administrator



James DePree  
Natural Resource Policy Specialist

## Ad Hoc Committee

P.O. Box 484  
Occidental, CA 95465  
707 874-3855

Bob Williams  
Department of Fish and Game  
601 Locust Street  
Redding, CA 96001

1 of 2

12/6/06

re: NOP DEIR Scott and Shasta River Watershed ITP and Master Streambed Alteration...

Dear Mr. Williams,

1. This ITP and "Master" streambed alteration agreement and its associated proposed Draft EIR are absolutely inappropriate and to the best of my knowledge and belief *illegal* -- a violation of CEQA and perhaps other California Codes. A "Master" agreement is outrageously wrong for the Scott and Shasta, especially considering the ongoing degradation of the Klamath watershed and the fact that the degradation is being used to justify the destruction of the commercial salmon fishing industry! We need analysis of *specific* projects and *specific* impacts, not a *generalized analysis* of activities in *general*.

The Klamath watershed is "degraded" (EPA assessment over 10 years ago). The Shasta has temperatures so high they are *lethal* for salmon. A once highly abundant resource has been reduced to threatened or nearly extinct, due to water diversions. The commercial salmon industry, along with the watershed, reduced to but a fraction of its former productivity and the the Siskiyou Resource Conservation District would consider a so-called "Master" streambed alteration agreement that would allow individual property owners and the RCD to *avoid* a specific analysis of proposed "bulldozing", "additional diversions", "cattle crossings", "flashboard dams", "gravel push-up dams", "pumps", "excavations" without requiring a *specific* EIR on each and every such potentially disastrous project proposal!??

Such a proposition in the context of the collapse of the commercial salmon industry, *due to degradation of the Klamath*, is appalling. We don't need any additional siltation downstream from any projects -- even those *purporting* to be in the best interest of the coho. The best approach to saving coho and chinook and increasing their abundance, is to get the heavy equipment out of the streams, and *reduce*, not add to the already existing water diversions.

2. Since the MSAA and ITP are still in *draft form*, it is premature to attempt an environmental assessment of them! It is impossible to assess the adequacy of the "checklist" absent the Final MSAA and ITP. Do we evaluate generalities now, only to see the "Draft" changed later?

3. What about *cumulative* impacts? *How many* new diversions, push-up dams, bulldozers, cattle-crossings, etc, would the Master Plan allow? How could an EIR assess cumulative impacts without knowing the sum total of projects and where exactly they are proposed to be located?



2 of 2

4. It might sound positive, on its face, to plant shade plants along the banks, but often the road to disaster is paved with good intentions. We cannot just assume that the best judgment and best risk-benefit assessment will prevail in any given case. Willows have been planted where they do not grow, and bank stabilization projects have caused bank failures. We need to be analyzing and commenting on specific projects as they are proposed, not "agreement" generalities.

5. We believe that the "future studies" in the ITP and MSAA for both Shasta and Scott Rivers are in violation of CEQA per *Sundstrom v Mendocino*. If you proceed with this environmental assessment, specific analysis of any project would happen *in the future, after* this generalized, non-specific, environmental review, *outside the scope of public disclosure* and comment, which we believe, is in violation of CEQA.

6. "Future studies" examples:

Page 12, Scott River Environmental checklist (equivalent examples are in the Shasta document):

"...each sub-permittee...*will* implement specified requirements in an effort to eliminate 100% of the fish barriers...." *Future specifications!* We cannot *assume* these "specified requirements" will be adequate just because they will be reviewed by CDFG. Specified requirements need to be prepared for the public and other agency review *during, not after*, the CEQA process!

"...each sub-permittee *will be* required to provide...fish passage...at each diversion.... Where such passage appears to be inadequate, the sub-permittee must submit plans to CDFG for review and approval." More *future* plans and *future* review. Plans must be part of, *not outside* the CEQA process. The *public* and other Agencies have an obligation to review those plans by law (CEQA).

"If engineered drawings are deemed necessary [by CDFG], they *will be* submitted for review and approval prior to implementing the project." More *future* plans and *future* review, *after* this CEQA process. Those specific plans need to be part of CEQA review.

7. In general, we believe that the MSAA and ITP for both Shasta and Scott Rivers are an attempt to remove specific instream projects from public scrutiny contrary to CEQA. This must not be allowed. We say scrap this project. It runs counter to all the positive efforts being made to restore our the watershed. If RCD and CDFG review was adequate to protect the Klamath watershed and its resources from degradation, the Klamath would not be degraded today! There is need for radical departure from past practices and a need for public and other agency ideas *per CEQA*.

Sincerely,



Ann Maurice



# CALIFORNIA TROUT

November 20, 2006

Bob Williams  
Staff Environmental Scientist  
Conservation Planning  
California Department of Fish and Game  
601 Locust Street  
Redding, CA 96001

**RE: Shasta and Scott River Watershed-Wide Permitting Program**

Dear Mr. Williams,

California Trout appreciates the opportunity to comment on the California Department of Fish and Game's (CDFG) Shasta-Scott River Watershed-Wide Permitting Program (Program). We understand at this time we have the opportunity to comment on the scope and content of environmental information for the development of a Draft Environmental Impact Report (DEIR).

California Trout is a statewide conservation organization dedicated to protect and restore wild trout and steelhead waters throughout California. California Trout operates a field office in Mt. Shasta and has worked specifically in the Shasta River watershed since 2000. California Trout has served as a member of the statewide Coho Salmon Recovery Team and the Shasta-Scott Recovery Team (SSRT).

We are supportive of the Program to develop a watershed wide permitting process to implement coho salmon recovery tasks and facilitate compliance of agricultural activities and restoration projects with the California Endangered Species Act (CESA). However, for the program to succeed several fundamental issues must be addressed.

- The Program is intended to address Fish and Game Code Section 1602 but should not memorialize or provide any other explicit exemption for landowners to comply with the Fish and Game Code, including but not limited to Section 5937.
- California Trout recommends that these measures not be financed exclusively with public dollars. Diverse funding mechanisms for all



measures should be identified and include the contributions from applicants.

We are confident the above issues can be addressed and believe on the whole the implementation of the Program will facilitate implementation of Coho Recovery Strategy recommendations and improve habitat conditions for coho salmon in the Shasta and Scott Rivers. Below we provide our specific comments on the Initial Study by section and highlight issues in need of additional evaluation in preparing the Draft Environmental Impact Report (DEIR).

### ***8.1 Project Overview***

If DFG extends the Master Streambed Alteration Agreement (MSAA) an additional five years as proposed (pg. 2) there should be a public review process for the extension. The DEIR should evaluate the need for a public review process at the end of year five.

We look forward to reviewing and commenting on the specifics of the Incidental Take Permit (ITP) and the MSAA at the appropriate time. Our comments here are in the context of not reviewing the details of these plans because we understand they are still in draft form and not ready for public comment. We also understand these documents will be made available as part of the DEIR and we look forward to commenting then.

### ***8.3 Environmental Baseline***

CDFG defines environmental “baseline” conditions (pg. 6) as the date the application for an ITP is submitted. However, baseline conditions are what led to CESA and Federal ESA listings. The DEIR should evaluate the use of baseline conditions that provide a higher threshold than existing conditions.

#### ***8.4.1 Covered Activities***

##### ***ITP and MSAA Covered Activity 1: Water Diversion Pursuant to a Legal Water Right.***

All water rights should have mechanisms for verification as specified in the *Coho Recovery Strategy for Coho Salmon*, Table 10-1 recommendations WM-2a-d, pages 10.4 and 10.5. The DEIR should evaluate the potential impacts of the potential for legal water right diversion allocations to exceed available instream flows. The DEIR should identify and evaluate measures to protect coho salmon in these instances.

##### ***ITP and MSAA Covered Activity 2: Water Diversion Structures.***

Covered Activities include flashboard dams, gravel push-up dams and other temporary structures. Gravel push-up dams “form a flow barrier that seasonally blocks the flow of the stream/river” (pg. 7). The DEIR should evaluate gravel push-up dams and their compliance with Fish and Game Code Sections 5901 and 5937.

## ***8.4.2 Conditions of Approval***

### ***ITP General Condition C***

This condition requires sub-permittees to provide “non-enforcement CDFG representatives written consent to access the sub-permittee’s property.....” (p. 11). California Trout requests that all CDFG employees be allowed access to sub-permittees property subject to the written consent and prior notice stipulations. Specifically denying access to CDFG enforcement representatives unnecessarily garners mistrust. Additionally the DEIR should evaluate the need for landowner access agreements for CDFG to inventory and assess fishery populations and habitat conditions in all areas covered by Program.

### ***ITP General Condition D***

This condition identifies sub-permittees as being responsible for any costs to implement any avoidance or minimization measures and that that the SVRCD is responsible for costs to implement any mitigation and monitoring measures. CalTrout agrees with this condition and we would also like to highlight the issue of funding these measures. CalTrout recommends that these measures not be financed exclusively with public dollars. Diverse funding mechanisms for all measures should be identified and include the contributions from applicants.

### ***ITP General Condition F***

The DEIR should explain and evaluate Condition F (pg. 11) regarding a \$100,000 letter of credit for CDFG to draw against if the RCD or sub-permittee fails to comply with measures they are responsible for.

### ***ITP Additional Avoidance and Minimization Obligation C: Fish Passage Improvements***

This condition requires that “the SVRCD and each sub-permittee with fish passages issues will implement specific requirements in an effort to eliminate 100% of the fish barriers on a scheduled basis over the term of the ITP” (Initial Study, Page 12). CalTrout supports this measure. However, we note the contradiction of this measure when compared to *ITP Additional Avoidance and Minimization Obligation I: Dwinnell Dam and the Montague Water Conservation District (MWCD)*. In regards to fish passage Obligation I requires the MWCD to shall develop a feasibility study to “investigate the possibility of providing fish passage at Dwinnell Dam” (Initial Study, Page 14, emphasis added). In the development of a Draft EIR this contradiction should be resolved by clearly identifying and evaluating potential measures to provide fish passage around Dwinnell Dam.

### ***Flow Enhancement Mitigation 2: Improve Baseline Instream Flows Via Water Efficiency Improvements.***

This mitigation measure states that “generally” a water transfer will utilize Water Code Section 1707 (p. 14). California Trout believes all transfers should be done under 1707 and request that the DEIR evaluate this water transfer issue.

*Flow Enhancement Mitigation 3: Develop and Implement a Contingency Plan for Dry and Critically-Dry Water Years.*

Flow Enhancement mitigation 3 (pg. 15) includes pumping groundwater to meet surface flow requirements during Dry and Critically-Dry Water Years. The DEIR should evaluate the potential impacts of pumping groundwater during dry years. Groundwater pumping during dry years has the potential to exacerbate low flow conditions.

*Flow Enhancement Mitigation 4: Install Alternative Stock Water Systems.*

Flow Enhancement mitigation 4 (pg. 15) also relies on groundwater pumping. As for *Flow Enhancement Mitigation 3* the DEIR should evaluate the potential impacts of groundwater pumping during dry years for stock water purposes. Specifically, connectivity and water right issues should be addressed.

### **8.5.3 Monitoring and Adaptive Management Program Under the ITP**

The DEIR should evaluate the efficacy of allowing the SVRCD to be responsible for monitoring sub-permittees' compliance with the terms. We see the rationale in this arrangement given the SVRCD may be best suited to implement a monitoring program but the DEIR should clearly evaluate the relationship between the SVRCD and the CDFG as the enforcement agency. Our primary concern is that because the SVRCD is an organization representing member landowners and in certain circumstances be reluctant to report violations to CDFG and in some cases this may happen unintentionally. We believe these concerns can be alleviated by a clear evaluation in the DEIR of the role of the SVRCD in compliance and evaluation of the role of CDFG.

California Trout believes one of the most important parts of the Program is effectiveness monitoring. We recommend that the DEIR evaluate an effectiveness monitoring plan. We suggest an evaluation of the Integrated Status and Effectiveness Monitoring Program (ISEMP) currently being implemented in the Columbia River Basin. The ISEMP has been created as a cost effective means of developing protocols and new technologies, novel indicators, sample designs, analytical tools, data management, communication tools and skills, and restoration experiments. The most important and relevant part of the ISEMP is the Intensively Monitored Watershed (IMW) program designed to determine the effectiveness of restoration actions through an experimental management framework. We believe this program could provide an excellent framework for evaluating the success of the Program and California Trout stands ready to assist CDFG, SVRCD and landowners in establishing this program. Further information on the ISEMP program can be found at <http://www.nwfsc.noaa.gov/isemp>.

## **Conclusion**

California Trout appreciates the opportunity to comment. We are supportive of CDFG, SVRCD and landowners efforts to develop the Program and are confident that a comprehensive Draft Environmental Impact Report will adequately address and evaluate our concerns. Any questions about California Trout's comments can be addressed to

Curtis Knight in our Mt. Shasta Area Office at (530)926-3755 or by email at [caknight@jps.net](mailto:caknight@jps.net).

Sincerely,

Curtis Knight  
Mt. Shasta Area Manager



**T**he public is invited to provide comment or concerns  
related to the Shasta River Watershed Project.

Name: Regina Cuchizola - Klamath River Keeper

Comments may be submitted tonight  
or mailed to:

Address: PO Box 21

Mr. Bob Williams,  
Staff Environmental Scientist

City, State, Zip: Orleans CA 95556

Conservation Planning (CDFG)  
601 Locust Street  
Redding, CA 96001

Telephone: 530 627-3280

(530) 225-2365 (phone)

E-mail: klamath@seup.net

(530) 225-2381 (fax)

COMMENT: The Shasta + Scott Rivers have most of the  
water diverted and need additional flows.  
The job of the agencies is to protect the  
Coho not only to work with water  
users. Down river communities are effected  
by the Scott + Shasta.

Additional water needs to be cold. Parks Creek  
should go it the river and not into Lake  
Shastina. Water weirs should not be bulldozed  
or grazed + ground water needs to be included  
in the Scott. I will provide additional  
comments later. Please have a hearing for

Thank you for your participation: down river communities. We need to  
try to hard to give input. ~~I will do~~  
Thank you, Regina



North Coast Consumer's Alliance  
P.O. Box 351  
Redwood Valley, CA 95470

To: Bob Williams  
Staff Environmental Scientist  
Conservation Planning, CDFG  
601 Locust St.  
Redding, CA 96001  
FAX: 530 225-2381

Re: Notice of Preparation of a Draft Environmental Impact Report, Shasta River  
Watershed-wide Permitting Program.

Dear Mr. Williams,

Thanks for taking a special effort to provide me with the two NOP's on the Shasta and Scott Rivers and for allowing me time to study the documents and to respond. It is very much appreciated.

The covered activities permitted through the watershed-wide program have not been sufficiently described in scope, number or intensity of streambed disruption. New diversions? It doesn't exclude them.

Under the Program, heavy equipment may operate in the streambed every day of every summer for ten years. This is an unacceptable amount of streambed disturbance.

Permitting new wells for stock watering without doing a thorough groundwater/surface water relationship study is unacceptable. Agricultural activity can be economically sustainable over time if it is environmentally sustainable. If you don't know how much water is in the aquifer and if you don't know how that quantity relates to river flow, how can you tell what level of water extraction is sustainable? High temperature/low flow conditions might give you a clue, however, that too much water is being diverted. The NOP considers this condition as merely an opportunity get heavy equipment into the streambed, possibly to create new diversions. This is not acceptable.

Grazing of livestock in the streambed will become a permitted activity, approved by the CDFG. Not acceptable.

The Program will permit the current amount of tailwater returns for several years. Not acceptable.

The Program will allow the continued entraining of fish into the fields for fertilizer for too long. Not acceptable.

The timetable for changing to more fish-friendly diversion techniques and for reducing tailwater returns is so slow that it almost guarantees the demise of the coho.

The hopefully beneficial actions outlined in the NOPs for both the Shasta and the Scott (opening up fish passage barriers, dam removal etc.) have not been adequately described. Each project may require its own EIR to comply with CEQA. Without such, the public may be locked out of the information needed to respond. This Program is already illegal in that it authorizes continued activities that harm Coho. It will be doubly illegal if it thwarts CEQA.

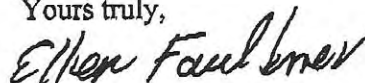
The uncorrected over-extraction of water from the tributaries and continued pollution by animal wastes have contributed to the diminished carrying capacity of the Klamath, which in turn has shut down the commercial salmon fishing industry along the North Coast. The closures are due to concerns about the "weakest stock." The coho in the Shasta and the Chinook in the Klamath are designated as weakest stock. While the CDFG Program is permitting take of Coho in the Shasta and adversely impacting the Chinook, the PFMC is shutting down the commercial salmon fishery due to this take. Any EIR must be widened to include a discussion of this unfortunate set of regulations. Scoping sessions must be conducted near the fishing communities along the coast that are the most deeply impacted economically.

In summary, the Program institutionalizes the horrendous management practices that got the Shasta in the sorry condition it is now. It is a prescription for ongoing mismanagement for the next ten years. In order to comply with CEQA, alternatives must be considered. Instead of twisting CESA and section 1602 to comply with the current mismanagement:

- Give the ag interests a disincentive to continue entraining fish into the fields for fertilizer. Fine them heavily. Stop unscreened diversions now!
- Give them a similar disincentive for creating tailwater returns. Fine them. Let the new regulations stop tailwater returns NOW not ten years from now.
- No new water diversions!
- Encourage the NCWQCB to use its power to cut back on the water rights of the most egregious water wasters.
- Get tough! Use whatever enforcement powers you have to trim the beef industry of wasteful and destructive practices and of unsustainable overproduction.

There is a built-in incentive for producing sustainably farmed beef. The public will pay more for it.

Yours truly,



Ellen Faulkner

Bob Williams  
Staff Environmental Scientist  
Department of Fish and Game  
601 Locust Street  
Redding, California 96001  
October 29, 2006

**Re: Scott and Shasta Incidental Take Permits for Coho Salmon; Scoping Comments**

Dear Mr. Williams,

The Draft Take Permit should be released for review by downstream affected interests. Involvement of downstream fishing communities, tribal governments, Counties, and the public is essential to developing a plan that will achieve recovery goals for listed coho salmon. The Coastal Commission also has an interest, and should be included in the development of the ITP. Agreements between State and Federal agencies for fisheries protections and public funding must also be considered.

Water pollution problems in the Scott and Shasta Rivers are exacerbated by low and no-flow conditions in the rivers and their tributaries at times of year crucial to coho survival. The Draft ITP Applications for the Scott and Shasta Rivers do not contain a goal of achieving minimum flow requirements for coho salmon. Buying water each year from willing sellers does



not provide for flows in dry years. Long-term solutions must be found to provide the needed water flows, such as permanent transfer of water dedicated for fish. Since coho salmon live in fresh water for a year before migrating to the ocean, year-round cold water must be provided for them in order to begin recovery.

Dwinnell Dam must be addressed for its contribution to temperature and low dissolved oxygen pollution in the Shasta River, and also because it blocks access to significant spawning habitat upstream. Dwinnell Dam is currently in violation of state laws requiring flow releases. It does not provide any electricity generation.

Cold, oxygen-rich water would also contribute to the ocean fishery for chinook, which is limited in good years by restrictions on coho. The Klamath river system is essential to a viable commercial fishery in the ocean, and hearings should be held in coastal communities. Fishing economies of cities from as far away as Morro Bay in Southern Central California to ports in Northern Oregon are severely affected by the health of fisheries in the Scott and Shasta Rivers. Ninety percent of California ocean commercial salmon permits have been dropped in the last twenty years, largely due to area closures to protect Klamath River fish stocks. Fishing closures began 27 years ago, in 1979, for Klamath stocks, only to have habitat continually degraded in the river. The 2006 ocean season was the most restrictive in history. Scott and Shasta Rivers are major tributaries, and should be producing healthy fish runs. Instead, the rivers are dewatered for months in some years, leading to fish kills and late spawning.

Groundwater pumping must be fully mitigated in order to allow an exemption for groundwater pumping. Much of the agricultural diversion from the Scott River is from wells connected to the river; this must be addressed in the ITP. Compliance with provisions of the ITP must be monitored and enforced by other than irrigators affected by the requirements, who serve on the Resource Conservation District. The RCD has a history of publicly opposing any regulation of their water-use activities, and is not likely to be effective in protecting the interests of the fish. The Department of Fish and Game, whose officials are sworn to uphold laws that prevent dewatering of the rivers, also have a twenty-year history of not enforcing Fish and Game laws related to minimum flows needed for salmonids in the Scott and Shasta Rivers.

The California Endangered Species Act (CESA) and CEQA require specific actions with timelines for recovery of threatened coho salmon. The California Recovery Strategy for coho salmon contains six goals for recovering coho salmon populations, and before de-listing can be achieved:

- Maintain and improve the number of key populations and increase the number of populations and cohorts of Coho salmon.
- Maintain and increase the number of spawning adults.
- Maintain the range, and maintain and increase distribution of Coho salmon.
- Maintain existing habitat essential for Coho salmon.
- Enhance and restore habitat within the range of Coho salmon.
- Reach and maintain Coho salmon population levels to allow for the resumption of Tribal, recreational, and commercial fisheries for Coho salmon.

The de-listing goals should be met before irrigators are exempted for “take.”

Minimizing “take” at diversions is a good idea, and a legal requirement with which irrigators have been out of compliance for years. California’s Fisheries Restoration Program maintains public confidence in the distribution of public moneys for restoration by requiring that the funds not be used for compliance with existing laws. Preliminary documents of the ITP suggest the intention is to pay for regulatory compliance with public money, reducing opportunities for other effective projects not already required of the landowner. In fact, a large part of ten million dollars of restoration money was recently directed through CDFG to do just that, ostensibly to buy cooperation with the ITP from landowners. Involving a larger body of the interested public would open the process to considering the benefit of all parties, instead of re-creating a 1950’s style “smoke-filled rooms,” back-scratching situation of mutual self-interest.

Fencing out cattle and planting riparian vegetation will not be effective without cold water flows at critical times for juvenile and adult salmon. Coho salmon populations will not recover without water. Stranding of fish when portions of the stream are dewatered is a direct “take,” illegal before CESA listing, but historically un-enforced in the Scott and Shasta Valleys. But stressful and lethal hot water temperatures for fish when they cannot access cold water refuges must also be mitigated for the agricultural exemptions to be mitigated. Acquisition of

sources of cold water from springs and enforcement of existing laws such as 5937 would help. Side-channels and backwaters can be good refuges for juvenile fish—very effective examples have been created on the Mattole River. The California Environmental Quality Act, CEQA, requires full mitigation before take can be permitted.

CDFG should fulfill its obligations as an agent of the State of California to benefit all the people of the state, including all interested parties in development of an effective recovery for threatened coho populations that belong to all of us before taking part in any agreements that will further divide communities in the Klamath Basin. All legal obligations to protect and restore threatened coho populations must be met before irrigators are exempted for “take.”

Vivian Helliwell  
Pacific Coast Federation of Fishermen's Associations  
P.O. Box 307  
Eureka, CA 95502

**T**he public is invited to provide comment or concerns related  
to the Shasta River/Scott River Watershed Project.

Name: Gary Black

Address: 5916 Eastside Rd

City, State, Zip: Etna CA 96027

Telephone: 530 487-7472

E-mail: gblack@Sisqtel.net

Comments may be submitted tonight  
or mailed to:

Mr. Bob Williams,  
Staff Environmental Scientist

Conservation Planning (CDFC)  
601 Locust Street  
Redding, CA 96001

(530) 225-2365 (phone)

(530) 225-2381 (fax)

COMMENT: Shn Monke made comment about specific issues being  
considered. His example is not specific but has not been  
addressed. There are numerous flumes that cross  
streams which require maintenance, repair, and replacement  
In sections that cover diversions & diversion  
structures, flumes or construction of alternatives  
may need to be included as a ~~state~~ standard.

Thank you for your participation!

Scott Scoping meeting  
10/25/06



**T**he public is invited to provide comment or concerns  
related to the Shasta River Watershed Project.

Name: Jack Cowley

Address: 7335 Ball mtn Rd

City, State, Zip: Montague Calif 96064

Telephone: 530 459 5506

E-mail: \_\_\_\_\_

Comments may be submitted tonight  
or mailed to:

Mr. Bob Williams,  
Staff Environmental Scientist

Conservation Planning (CDEG)  
601 Locust Street  
Redding, CA 96001

(530) 225-2365 (phone)

(530) 225-2381 (fax)

COMMENT: The program has become to complex, time  
consuming & Expense.

The Fish & game state they are following the will of the  
people, therefore the people (state) should pay all the  
costs. The burden should not be shouldered by the landowners.  
The loss of water for irrigation will forever destroy  
sustainable Agriculture in Shasta Valley.

The only alternative is to destroy Shasta Valley as a  
pristine area of Calif. Forever!

RCDs are Voluntary thus too much of a burden is placed on  
Volunteers.

Thank you for your participation!



Monique

D-WIDE PERMITTING PROGRAMS  
VIRONMENTAL IMPACT REPORTS

The public is invited to participate  
to the Shasta River/Scott River Watershed Project.

Name: Monique Dixon  
Address: 60814 E. Callahan Rd  
City, State, Zip: Callahan CA 96014  
Telephone: 530-410-2054  
E-mail: auntnigue@hotmail.com

Comments may be submitted tonight  
or mailed to:

Mr. Bob Williams,  
Staff Environmental Scientist

Conservation Planning (CDFG)  
601 Locust Street  
Redding, CA 96001

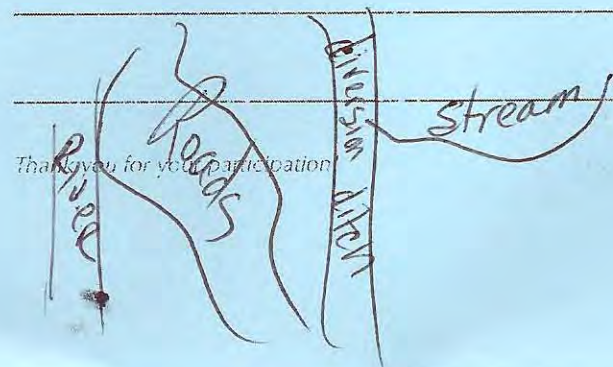
(530) 225-2365 (phone)

(530) 225-2381 (fax)

COMMENT: RE: MSAA

Have you considered those streams  
that may not have access to the  
river because of blockage, but the  
water does flow through diversions &  
eventually end up back in the river.

I realize you aren't considering  
upslope issues, but the MSAA should  
be applicable to all streams in  
the watershed.



Shasta River Program  
Survey meeting 10/25/06



Margaret Draper / Attorney at Law / POB 176 / Bayside / CA 95524

2006 NOV 14 PM 1:29  
DFG - RECORDING  
RECEIVED

November 13, 2006

Bob Williams  
Staff Environmental Scientist  
Dept. of Fish and Game  
601 Locust St.  
Redding, CA 96001

Re: TMDL / ITP Shasta and Scott Rivers

Dear Mr. Williams:

I am writing with regard to the Shasta and Scott rivers – significant tributaries to the beleaguered Klamath system. As a prior Shasta Valley Resource Conservation District Director, I can attest to the fact that much was known 20 years ago regarding the high contributions of heat and silt pollution from those two rivers to the Klamath River. Additionally, all the dire events warned of at the time, by tribal groups, independent scientists, fishermen and conservation groups (among others), regarding the viability of downstream fish populations have, sadly, come to pass. Mere warnings have done little to motivate change sufficient to improve fish survival.

The current science on the subject does not appear to show any improvement in the way that landowners and agencies have cooperated to solve the problems of temperature/oxygen content and siltation – let alone chemical pollution. If the “proof is in the pudding,” the progress report is dismal.

While I am sympathetic to the needs of landowners and agriculture, destruction of riparian habitat, diversion, and other pollution problems can, and should, be mitigated. Without strict TMDLs this will not occur. Landowners, where pocketbooks are slim, need assistance from agencies to address proper goals – it is an investment government can and should make. Assistance to landowners should not come in the form of easing restrictions, but rather in enabling them to participate in improving water quality. Allowing excessive incidental take permits is not the road public policy should follow in the face of fishery extinction and severe compromising of the Public Trust with regard to the state's waters.

I understand that the North Coast Regional Water Quality Control Board (NCRWQCB) approved the Shasta TMDL on June 29, 2006 and it will be considered for adoption before the State Water Resources Control Board (SWRCB) on November 15, 2006. The Boards website refers to TMDLs as a

'pollution budget' designed to restore the health of a polluted body of water.  
The TMDL process provides a quantitative assessment of water quality

problems, contributing sources of pollution, and the pollutant load reductions or control actions needed to restore and protect the beneficial uses of an individual waterbody impaired from loading of a particular pollutant...

In *Pronsolino et al. vs. Nastri et al* (2002) at pp 9 et seq.), the U.S. Court of Appeals Ninth Circuit provides great insight into the role of TMDLs:

(The TMDL)... shall be established at a level necessary to implement the applicable water quality standards... Section 303(d)(1)(C)...TMDLs serve as a link in an implementation chain that includes federally regulated point source controls, state or local plans for point and nonpoint source pollution reductions, and assessment of the impact of such measures on water quality, all to the end of attaining water quality goals for the nations waters.

The Clean Water Act thus provides an opportunity to employ TMDLs productively to protect water quality for sensitive and endangered fish species – but only if they are meaningfully applied. Your responsibility is to use the best available science – including use of prior studies and findings – to establish such loads.

In my opinion, the Shasta TMDL model should have included pH because pH values have exceeded Basin Plan objectives for years and are high enough to stress salmonids. This has been known for some time and there is no reason to omit it from the model. It is inconceivable to me that *all* forms of nitrogen were not properly measured and modeled. This has been a significant known problem in the system for decades!

Flood siltation from Parks Creek was an issue raised within the Shasta Valley RCD in the early 80s. I remember letters in the file, written to and probably by the Shasta Valley Resource Conservation District. The fact that such loading was not included in the model is a gross oversight.

While the Shasta TMDL does acknowledge that Dwinell Reservoir is a major contributor to Shasta River problems, there is no mention of considering dam removal. Given the current status of dam removal, it should be on the table for consideration when it comes to water quality protection.

With regard to the Scott River, the TMDLs also appear less than useful. Vague monitoring measures proposed may well lead to extinction for fisheries, because adaptive management is impossible without sufficient information as conditions change – likely worsen. Decisions regarding Waste Discharge Requirement permits depend on good monitoring.

Assigning groundwater and flow studies to the Siskiyou County, rather than a less biased and less financially challenged office like the SWRCB, almost guarantees such studies will be skewed or incomplete. I speak from experience, having lived and worked in Siskiyou County for more than a decade.



It is again most surprising that the extinction risk of Coho Salmon populations in the basin are not emphasized or noted, and that the decline in the Scotts fall Chinook run is not addressed. Some sort of interim plan to protect these species short term needs inclusion.

Not only is a healthy fish population a good measure of good water quality in itself, but a wonderful benefit. Significantly, the potential importance of the fishery economy has been estimated to exceed the economic value of timber in Northern California since the early 1980s. Certainly, Tribal communities and the public need a healthy fishery.

One of the great frustrations of trying to protect anadromous fish populations in prior years was the fact that the Clean Water Act was not being enforced with regard to non-point source pollution. Now that the Act has been ruled to include such pollution since 2002, agencies and scientists should be actively pursuing goals and standards that actually make a difference in water quality. If "TMDLs serve as a link in an implementation chain," as the court noted above, it is your obligation to improve standards so California can actually ameliorate quality in the Klamath Basin, instead of continuing the frustrating charade that has taken place in the course of my lifetime.

Thanks for your attention to these comments, which I ask be incorporated into the public record at your agency.

Sincerely,



Margaret Draper

Cc to: Donald Koch

Dean Estep  
P. O. Box 2179  
Ft. Bragg, Ca., 95437  
707 - 964 - 3700

Bob Williams  
Department of Fish and Game  
601 Locust Street  
Redding, Ca. 96001

re: Scott and Shaster River Watershed ITP and Master, Streambed Alteration...

Dear Mr. Williams:

I, would start by saying that I, strongly oppose this master streambed alteration. This agreement is so vague how can there be a honest E.I.R., how could this be in compliance with CEQA.

To suggest incidental take permits and more water diversions is outrages.

The sub-permittee must submit plans to CDFG for review and approval. How can this be in compliance with (CEQA)?

It sounds like you sign and we'll fill in the blanks later. "NO THANK-YOU"

The Shasta and the Scott are part of the Klamath watershed. Which has been used to destroy the commercial salmon industry.

The flow in the Shasta is already to low, with temperatures that are lethal to salmon. I see nothing in your report about chinook salmon, does this mean you don't need a I.T.P. to kill them?

It sounds like you are trying to under mine what the north regional water board is doing.

The idea of bulldozers, backhoes and other heavy equipment in and around the Scott and the Shasta Rivers at any time of the year is adding more degradation to the already troubled Klamath River.!!

If you would like pictures to show the impact this has had on Fort Bragg and the commercial salmon fishermen?

I, would be happy to send them. They just ground up 2 more salmon boats and hauled them off in large dumpsters to hazard waste dumps.!!

Sincerely,  
Dean Estep  
Commercial Salmon Fisherman:





**T**he public is invited to provide comment or concerns related  
to the Shasta River/Scott River Watershed Project.

Name: Don Gutleben

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail: \_\_\_\_\_

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or mailed to:

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Conservation Planning (CDFG)  
601 Locust Street  
Redding, CA 96001

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(530) 225-2381 (fax)

COMMENT: The fish are going through the screens  
& getting stuck - they can't get back  
through. They are living in the ditch & not  
going back through. Actually those  
JUNK fish are Trout!

The "junk fish" are still a valuable  
food source for other species of animals.

Thank you for your participation!

Scott River Program - Workshop  
10/25/06



**T**he public is invited to provide comment or concerns  
related to the Shasta River Watershed Project.

Name: Justin Ly

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail: justin.ly@ca.usda.gov

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or mailed to:

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COMMENT: Pg. 7 of Initial Study - water diversion is covered  
if ag operator uses water for domestic use. Why not cover  
domestic use (if there's any) regardless of whether the user is an  
ag operator or not?

Pg. 36 CA red legged frog - I'm not aware of CA red-legged  
frogs in our area, but it never hurts to check. Will there be surveys  
done to assess/confirm, ~~not~~ and if so, what avoidance, minimization  
and/or mitigation measures will be implemented?

Pg. 37 - Caho Recovery Strategy is the recovery plan so the  
statement that the "Recovery Strategy is the preliminary step toward  
a state recovery plan" is incorrect.

Thank you for your participation!

>>> DON MEAMBER <dmeamber@sbcglobal.net> 11/4/2006 12:06 PM >>>  
Hello Bob,

I am Don Meamber, a rancher, and met you at the Scoping Meeting in Yreka recently. My ranch pumps from the Shasta R. and buys water from Montague Water Conservation District and I am on the Shasta Valley RCD Board. I have a few comments regarding shortages in the Draft ITP. For example on page 19 concerning Fish Screens it states:

"2. Any unscreened diversion in the Program Area operated by a shall have a fish screen installed on or in the diversion no later than four years from the effective date of the Permit...."

Then on page 25 for the Montague Water Conservation District the Draft states:

"In addition, MWCD shall prepare a feasibility study to investigate the design and implementation of fish screens on both the Parks Creek and Little Shasta River diversion."

The MWCD is planning on being a subpermitee and # 2 above says all unscreened diversions will be screened in four years. Sounds like the Draft is meaning: "except for the two diversions of MWCD unless the feasibility study finds those two would be recommended and possible." I am concerned that the petitioners who forced the Coho listing will make an issue of why the Water District is slipping through with a feasibility study, while everyone else must screen in four years.

Another issue of concern to me and the rest of the Board is something the DFG has not addressed in the Draft. The cost of implementing the program, with costs divided among the subpermitees. This is totally unfair. The three big water districts might only pay the same amount as each small user along the River and tributaries. Since the water districts take the lion's share of the water out of the River, they should pay their share of the water, or more properly the entire cost of managing the Permit. The landowners along the streams (two of the districts own no land) will have to bear the entire load of the mitigation projects. Even if grants cover the costs of them, these riparian ranches will have to put up with the work being done and the inspections. The water districts will face little of this.

The DFG should not leave this up to the volunteer Board of the Shasta Valley Resource Conservation District to vote on. CEQA needs to find that DFG must be involved in the decision since the DFG forced the issue of needing an Incidental Take Permit along with the Coho listing. The water districts' water users greatly outnumber the landowners along the streams and will not want to pay for implementation of the Permit, when nearly everything must be done on the riparian owners' properties. The riparian users may end up pulling out of the Permit when they find out how much it will cost them for a problem created largely by the big water districts by dewatering the River. Then the whole Permit will collapse, with law suits to follow.

Hope you can make CEQA recommendations for handling these unresolved issues.

Don Meamber



The public is invited to provide comment or concerns related to the Shasta River/Scott River Watershed Project.

Name: Danielle Quigley

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City, State, Zip: Etna, CA 96027

Telephone: 530 967 3247

E-mail: deerbrush@sigsitel.net

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601 Locust Street  
Redding, CA 96001

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COMMENT: This EIR should focus on currently existing areas of Key  
(A) chinook habitat (Votek 2005, Quigley 2005), and identify mitigation to ensure protection of those areas. A particular concern is the use of heavy equipment instream to maintain diversions please ensure that measures are identified to keep them out of stream during Key periods (ie identified spawning period Nov 15 - Jan 15 ~~and~~ and critical low flow rearing period ~ eg when Key reaches become disconnected. If it is within the scope of the EIR, please identify best possible practices for gravel push-up dams, etc. <sup>or standards</sup>  
(B) also Key areas of chinook spawning habitat

Thank you for your participation!

Scott River Program  
Scoping meeting 10/25/06